Tipping the Scales

Toward a Healthier Population

A Report of **Overweight** and **Obesity** in Utah

Utah Department of Health

August 2005

acknowledgments

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table of contents

list of figures

executive summary

Overweight and obesity are associated with chronic diseases such as diabetes, hypertension, stroke, heart disease, arthritis, asthma, and cancer. Additionally, overweight and obesity are associated with an increased risk for mortality/morbidity due to injury. Of special concern is the relatively new finding of risk factors for diabetes and heart disease being seen in children and adolescents; health professionals previously saw type 2 diabetes only in adults.

How Overweight Are We?

Overweight and obesity have reached nationwide epidemic proportions. The most recent data (2004 BRFSS) show that 60.1 percent of American adults were overweight or obese and 23.4 percent were obese. In Utah the rates are comparable, with 58.4 percent of adults being overweight or obese and 21.0 percent being obese (2004 BRFSS). These rates reflect an increase of 103 percent nationally and an increase of 112 percent in Utah over 14 years. The local health district in Utah with the highest rate of overweight or obesity was Tricounty, and the local health district with the lowest rate was Summit.

The overweight and obesity epidemic is not limited to adults. The most recent data (2003) show that 14.8 percent of American public high school students were at risk of becoming overweight and 12.1 percent were already overweight. In Utah, the rates are slightly lower, with 11.3 percent of Utah public high school students at risk of becoming overweight and 7.0 percent already overweight. The number of overweight Utah teenagers could fill 410 classrooms. (See Appendix A for definition of terms.)

Why Are We Overweight?

This increase in average weight for adults and children is attributable to consuming too much food (poor diet) and a decrease in physical activity. In general, the average American is consuming more high-fat foods; is drinking soda instead of milk; is consuming dramatically more cheese; is consuming few fruits and vegetables; is eating more meals/snacks outside of the home; and is moving less.

The number of trips the average American adult takes on foot each year decreased 42 percent between 1975 and 1995. Among American children, walking trips decreased 37 percent in the same time period. Today, only 10 percent of public school students walk to school compared to the majority of students a generation ago. Today, the most common means of transportation to school is by car.

Nutritional Trends

A national survey showed that the average adult total caloric consumption has increased by 181 calories per day from 1977-78 to 1994-96, which could result in a weight gain of over 18 pounds per year (NHANES). Additionally, the average Utah adult consumed less fruits and vegetables in 2003 compared to 1998 (in 1998, 26.7 percent of Utah adults ate five or more servings of fruits or vegetables per day compared to 20.6 percent in 2003). In general, women ate more fruits and vegetables than men, and obese adults

ate less fruits and vegetables compared to adults at ideal weight.

The same survey showed that average child/adolescent total caloric consumption has increased by 64 calories per day from 1977-78 to 1994-96, which could result in a weight gain of over 6 pounds per year. The Survey showed that only 14 percent of school children ate the recommended amount of fruits, 20 percent ate the recommended amount of vegetables, and 30 percent ate the recommended amount of dairy. The Survey also showed that over 66 percent of children ate more than the recommended amount of saturated fat and total fat. Added sugars, such as those found in soda, contributed to 20 percent of overall caloric intake. In the US, since the 1950s, milk consumption has decreased, while cheese and soda consumption has increased dramatically.

Physical Activity Trends

Although Utah is ranked third in the nation for adults getting the recommended amount of physical activity, 44.5 percent do not get the recommended amount. This did not differ by gender, though, as expected, older adults were less active compared to younger adults. Additionally, adults tended to watch a lot of television (29 hours per week for the average American man and 34 hours a week for the average American woman).

In 2003, 24.8 percent of Utah public high school students did not get the recommended amount of physical activity. This rate has remained relatively unchanged since 1999 and, regardless of gender, as the child gets older they engage in less physical activity. Increased media use, including television viewing, computer use, and video games, is speculated to have resulted in increased weight. About 38.2 percent of Utah public high school students watch three or more hours of television per day on an average school day, and a national survey found that 56 percent of children eight to 16 years of age have a television in their bedroom

Opportunities for Action

What are the opportunities for action? The U.S. Surgeon General, in the 2001 Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity, presents five overarching principles that Utah can adopt:

- Promote the recognition of overweight and obesity as major public health problems.
- Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
- Identify effective culturally appropriate interventions to prevent and treat overweight and obesity.
- Encourage environmental changes that help prevent overweight and obesity.
- Develop and enhance public-private partnerships to help implement this vision.

While, for the most part, overweight and obesity are a result of individual behaviors and choices, the environments in which we live shape those behaviors and choices. More than ever, we are challenged throughout the day to make healthy food and physical activity choices in environments that are not supportive. And, we now know the critical link between those choices and our collective future health and well-being.

Our *families, communities, schools, worksites, health care delivery systems, and the mass media,* to a large extent, define our environments. Therefore, these are the settings where we must identify opportunities for change, remove barriers to good health, and promote choices that support good nutrition and regular physical activity. Collaboration among and between people and organizations will multiply the efforts to improve weight management by individuals and for the entire population.

It is also critical that monitoring and reporting of indicators related to overweight and obesity be continued and refined. Through these efforts, we will be able to focus resources and define successes.

Now is the time for Utah's leaders, in all sectors, to work together to develop a focused, consistent, and coordinated approach that will create a culture and environment in Utah that makes the healthy choice the easy choice.

Introduction

Obesity, a serious condition in which weight gain has reached the point of endangering health, can contribute to the onset of disease and premature mortality. Obesity is a leading cause of preventable death in the United States.[1]

How Are Overweight and Obesity Defined?

Obesity and overweight are commonly defined in terms of the body mass index (BMI). BMI is calculated using a person's height and weight. In adults, a BMI of 18.5 to 24.9 is considered to be ideal, and anything above this is defined as overweight. A BMI greater than or equal to 30 is defined as obese. (See Appendix A.)

While the terms "obesity" and "overweight" refer to adults, the terms "overweight" and "at risk of becoming overweight" refer to children. For children between the ages of 2 to 20 years old, overweight is defined as at or above the gender- and age-specific 95th percentile of BMI, based on the revised Centers for Disease Control and Prevention Growth Charts for the US. "At risk of becoming overweight" is defined as greater than or equal to the 85th percentile, but less than the 95th percentile for BMI by age and sex based on the same growth charts. (See Appendix A.)

How Overweight Are We?

Overweight and obesity have reached nationwide epidemic proportions. The most recent data (2004 BRFSS) show that 60.1 percent of American adults are overweight or obese and 23.4 percent are obese.[1,2] This means that the percentage of obese adults has more than doubled over the last 14 years (11.5 percent in 1990; 23.4 percent in 2004). Since this epidemic shows no signs of declining, it can be considered the public health issue of the 21st century. For this reason, both the prevention and treatment of overweight and obesity, along with associated health problems, are important public health goals.

In Utah, a similar increase in the percentage of overweight and obese adults has occurred over time. The most recent data (2004 BRFSS) show that 58.4 percent of Utah adults are overweight or obese and 21.0 percent are obese.[2] This represents a 112 percent increase in the number of obese adults over the last 14 years (9.9 percent 1990; 21.0 percent in 2004).

The obesity issue is not limited to adults. In 2003, 12.1 percent of American high school students were overweight and 14.8 percent were at risk of becoming overweight. The comparable 2003 Utah data show that 7.0 percent of Utah high school students were overweight and 11.3 percent were at risk of becoming overweight.[3]

What Causes Overweight?

Overweight and obesity are caused by many factors. Body weight is influenced by a combination of genetic, metabolic, behavioral, environmental, cultural, and socioeconomic influences. Overweight

and obesity result from excess calorie consumption and/or inadequate physical activity.

What Is The Impact of Overweight?
A recent study showed that obesity was associated with 111,909 excess deaths (and overweight was not associated with excess mortality).[4] Adults who are overweight or obese are at increased risk for morbidity from arthritis, diabetes, hypertension, high cholesterol, coronary heart disease, sleep apnea, respiratory problems, and endometrial, breast, prostate, and colon cancers.[5]

Unlike many chronic diseases and their related risk factors, which disproportionately affect the poor and uneducated, obesity spans all income and education levels, as well as racial and ethnic groups. More than half of Utah's population is now either overweight or obese, or about 919,700 of the state's adults. The prevalence of overweight and obesity in Utah steadily increases until age 65, and more Utah men than women are overweight or obese; a trend observed in all age groups.[2]

In addition to an increase in onset of disease and premature mortality, obesity has serious financial consequences for both the individual and the American economy. This burden manifests itself in premature death and disability, increased health care costs, and lost productivity. The burden is not trivial. According to a study of national costs attributed to both overweight and obesity, related medical expenses accounted for 9.1 percent of total US medical expenditures in 1998, and may have reached as high as $78.5 billion ($92.6 billion in 2002 dollars). The estimated total cost of adult obesity-attributable expenditures in Utah is estimated to be $393 millon in 1998-2000.[6]

The importance of addressing overweight and obesity is evident when reviewing the Healthy People 2010 document.[7] Healthy People 2010 is a statement of national objectives designed to identify the most significant preventable risks to health and to establish national goals to reduce these risks. The Healthy People 2010 objectives were created by a broad collaborative effort that included scientific expertise from the government, academia, and the private sector. There are 10 leading health indicators, with physical activity and overweight/obesity being the first and second. These relate to two focus areas (nutrition and overweight, and physical activity and fitness) which include 33 specific national objectives combined. (See Appendix B for a list of the objectives relevant to this report.)

Chapter One: Overweight and Obesity by Age

Overweight and obesity transcends gender, age, and racial and ethnic groups. Today the number of children, adolescents, and adults who are obese is at a record high, with increases in obesity documented for children (kindergarten-eighth grade), adolescents (high school), and adults (18 years and older).

Children

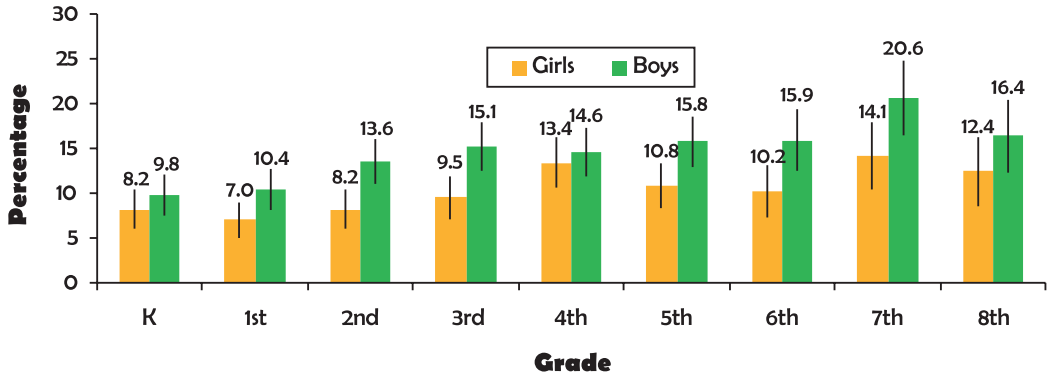
The number of overweight Utah children increased dramatically from 1993 to 2002.

In Utah in 2002, an estimated 25.5 percent of kindergarten-eighth grade students were overweight or at risk of becoming overweight. (See Appendix A for definitions of overweight and at risk of becoming overweight.) More boys were overweight or at risk of becoming overweight than were girls, 27.9 percent compared to 22.9 percent. More boys were overweight than girls, 14.1 percent compared to 10.0 percent. There was no significant difference between urban and rural schools.[8]

From 1993 to 2002 the number of overweight third grade boys increased by 119 percent (6.9 percent in 1993 to 15.1 percent in 2002), and the number of overweight third grade girls increased by 40 percent (6.8 percent in 1993 to 9.5 percent in 2002).[8] If this trend continues, one-third of all third grade boys could be overweight by the year 2010.[9] At the national level, a similar trend has been observed. In 1963-65, four percent of children 6-11 years of age were overweight compared to 16 percent in 1999-2002.[9]

Additionally, it appears that the percentage of overweight boys increases with increasing grade, with less than 10 percent of kindergarten boys, and approximately 15 percent of third to sixth grade boys, being overweight. This trend is not seen with girls. (See Figure 1.)

Figure 1. Percentage of Utah Children Who Were Overweight* by Grade and Gender, Utah 2002



Source: Utah Department of Health, Bureau of Health Promotion, Heart Disease and Stroke Prevention Program. (2002) Height/Weight Measurement.
Overweight is defined as ≥ the gender- and age-specific 95th percentile of BMI based on the revised Centers for Disease Control and Prevention Growth Charts for the U.S. (See Appendix A.)

adolescents

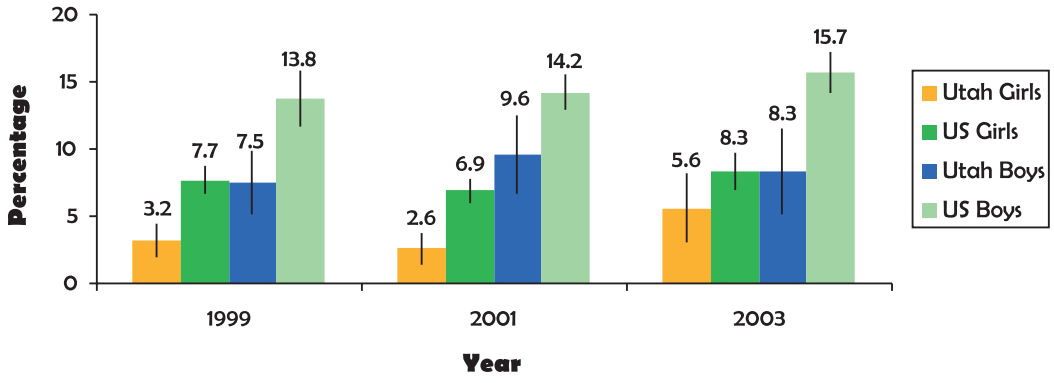
The percentage of overweight Utah high school students appears to be increasing over time.
According to the 2003 National Youth Risk Behavior Survey (YRBS), approximately 1.9 million public high school students report being overweight or at risk of becoming overweight. (See Appendix A for definitions of overweight and at risk of becoming overweight.) In Utah approximately 36,500 public high school students report being overweight or at risk of becoming overweight. The number of overweight Utah public high school students (14,000 students) is enough to fill 410 classrooms.

In 1999, 9.1 percent of Utah public high school students (9.4 percent of boys and 8.7 percent of girls) were at risk for becoming overweight compared to 14.3 percent nationally (14.8 percent of boys and 13.8 percent of girls). In 2003 both the Utah and national numbers appeared to increase; 11.3 percent for Utah and 14.8 percent nationally. Once again, a greater percentage of boys was at risk of becoming overweight (12.8 percent Utah and 15.2 percent US), compared to girls (9.7 percent Utah and 14.4 percent US).

In 1999, 5.4 percent of Utah public high school students were overweight, and boys were more than twice as likely as girls to be overweight (7.5 percent compared to 3.2 percent). (See Figure 2.) In 2003, these rates increased to 7.0 percent for all students (8.3 percent for boys, and 5.6 percent for girls).[3] However, small sample sizes make it impossible to determine if the change from 1999 to 2003 represents a statistically significant increase in the percentage of overweight high school students. What is evident is that the number of overweight high school students is not decreasing.

Figure 2.

Percentage of High School Students Who Were Overweight by Gender, Utah and US 1999, 2001, and 2003



Source: YRBS 1999, 2001, and 2003.
Overweight is defined as ≥ the gender- and age-specific 95th percentile of BMI based on the revised Centers for Disease Control Growth Charts for the U.S., and at risk of becoming overweight is defined ≥ 85th percentile and < 95th percentile for BMI by age and sex based on the same growth charts. See Appendix A.

According to national data from 2003, Hispanic/Latino students were more likely to be overweight than white, non-Hispanic/Latino students (16.4 percent versus 10.4 percent, respectively). In Utah, in 2003, there was not a statistically significant difference in rates of overweight by race/ethnicity between students in grades nine through twelve (6.7 percent for white, non-Hispanic/Latino students compared to 11.2 percent for Hispanic/Latino students). However, this finding does not mean that a real difference does not exist. Small numbers of minority students in the study may make the results less precise.[10]

Excess weight affects children's and adolescents' quality of life.
Quality of life for children and adolescents includes how they function physically, emotionally, socially, and in school.[11] In addition to increased frequencies of high cholesterol, high blood pressure, and type 2 diabetes among overweight children and children at risk for becoming overweight, psychological and social consequences are of particular concern. Overweight children and children at risk for becoming overweight suffer early and systematic discrimination; it is one of the least socially acceptable conditions in childhood.[11, 12] One study showed that overweight adolescents have fewer and less equal friendships than adolescents at ideal weight. In addition, they were less central to their social groups.[13] There is also evidence that overweight children and adolescents are four times more likely to report difficulties in school.[11]

Overweight in adolescents is widely known to be associated with low self-esteem and depression. Results from the National Longitudinal Survey of Youth indicate that early adolescence is a critical period for development of low self-esteem in overweight children.[14] Adolescents who are teased because of their weight may also be more likely to think about or commit suicide. (See Chapter 2, Violence and Injury Prevention.)

Children and adolescents who are overweight or at risk of becoming overweight have a greater likelihood of becoming obese or overweight adults.
Not only has there been an increase in the number of overweight children and adolescents, but studies have also shown that excess weight acquired during childhood or adolescence often persists into adulthood. In fact, overweight adolescents have a 70 percent chance of becoming overweight or obese adults. The rate increases to 80 percent if one or more parents are overweight or obese.[15] A study demonstrated that the risk of being an obese adult was 1.3 times higher for those who were overweight at one or two years of age compared with those who were not overweight at that age. The risk for being an obese adult is 17.5 times higher for those who are overweight at 15 to 17 years of age.[16]

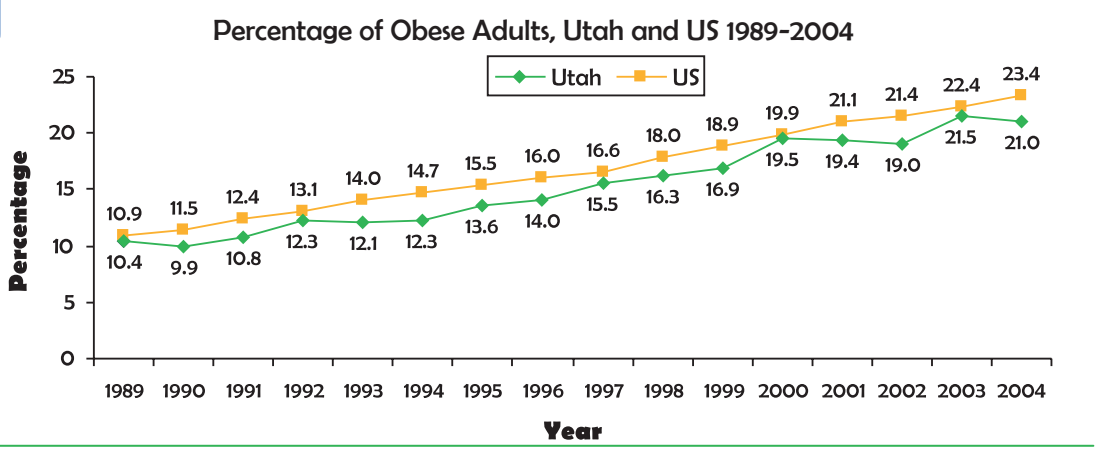
adults

The percentage of obese adults, both nationally and in Utah, increases annually.
In 1993, only 15 states reported obesity rates greater than the Healthy People 2010 Objective of 15 percent. In 2003, all 50 states had rates greater than 15 percent.[17]

The age-adjusted national rate of obesity increased from 11.9 percent in 1989 to 23.4 percent in 2004. By comparison, the age-adjusted proportion of Utah adults who were obese increased from 10.4 percent in 1989 to 21.0 percent in 2004. (See Figure 3.) This means that an additional 10,000 Utahns become obese annually, or about 27 Utahns each day became obese.[18] Clearly, Utah is not far behind the national trend in obesity rates.

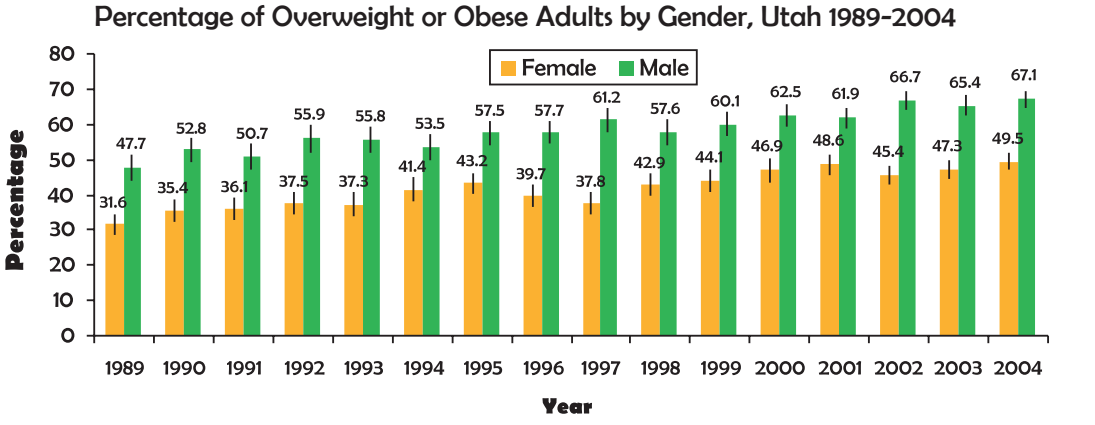
In 2004, in Utah, 67.1 percent of adult males and 49.5 percent of adult females reported being overweight or obese. This trend of more males being overweight or obese compared to females has remained constant since 1989. (See Figure 4.) If this continues, it is estimated that 73.5 percent of males and 55.4 percent of females

Figure 3.



Source: BRFSS 1989 to 2004; Age-adjusted to 2000 population.
Obese is defined as a BMI of ≥ 30.

Figure 4.



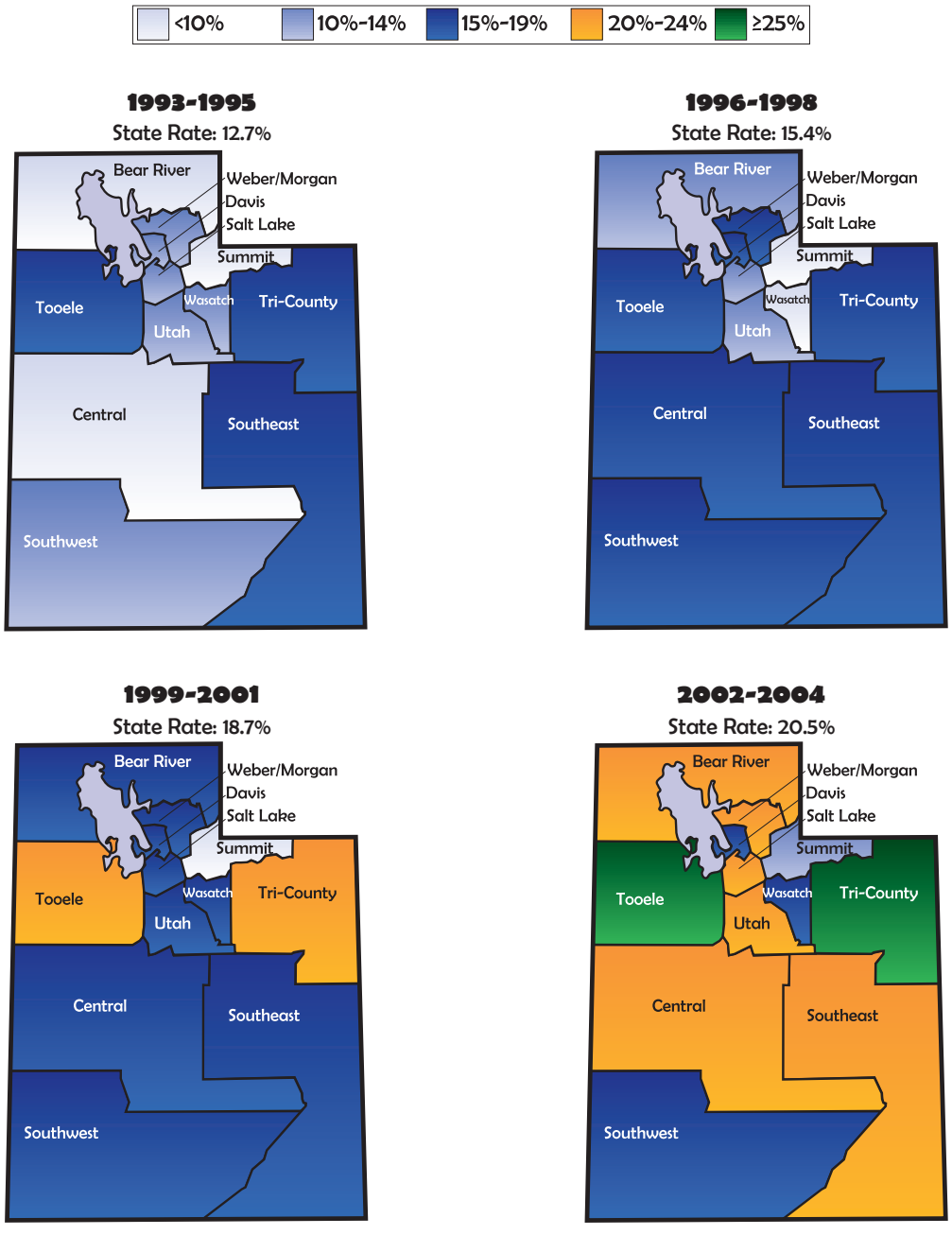
Source: Utah BRFSS 1989 to 2004; Age-adjusted to the 2000 population.
Overweight or obese is defined as a BMI of ≥ 25.

in Utah will be overweight or obese by 2010.[19] In Utah in 2004, the highest rate of overweight or obese people was reported for males 50-64 years of age (78.5 percent), and the lowest rate of overweight or obese was reported for females 18-34 years of age (39.0 percent).

For 2002-2004 combined data, the Utah local health district with the highest rate of overweight or obese people was TriCounty (64.5 percent) and the local health district with the lowest rate of overweight or obese people was Summit (43.9 percent).[2] Data from 1993-1995

Figure 5.

Obesity Trends Among Adults, Utah 1993-2004



Source: Utah BRFSS 1993 to 2004; Age-adjusted to 2000 population.
Obese is defined as a BMI of ≥ 30.

showed that no Utah local health district had obesity rates greater than or equal to 20 percent. Data from 2002-2004 showed that 8 of the 12 local health districts had obesity rates greater than or equal to 20 percent, including two greater than or equal to 25 percent. (See Figure 5.)

It should be noted that in studies of self-reported height and weight, overweight subjects tend to underestimate their weight, and all participants tend to overestimate their height.[20] Therefore, these results may be conservative and underestimate the true prevalence of obesity.

Excess weight affects adults' quality of life.

In 2004, 17.6 percent of obese Utahns reported fair or poor health status compared to 8.9 percent of those at ideal weight. Additionally, more obese Utahns reported engaging in no physical activity compared to Utahns at ideal weight (22.0 percent for obese and 13.6 percent for ideal weight) (BRFSS 2004).

Overweight and obese people may have co-morbid conditions such as diabetes, hypertension, high cholesterol, coronary heart disease, stroke, osteoporisis, sleep apnea, respiratory problems, and endometrial, breast, prostate, and colon cancers which could effect quality of life. (See Chapter 2.)

Some data also show that obese people don't succeed in business as well as those with a normal weight:

> "Studies on employment have shown hiring prejudice in laboratory studies. Subjects report being less inclined to hire an overweight person than a thin person, even with identical qualifications. Individuals make negative inferences about obese persons in the workplace, feeling that such people are less competent. One might expect these attributions to affect wages, promotions, and disciplinary actions, and such seems to be the case."[21]

Chapter Two: Overweight and Obesity and Co-Existing Chronic Diseases

Overweight and obesity are associated with chronic diseases such as diabetes, hypertension, stroke, heart disease, arthritis, asthma, and some cancers. In addition, overweight or obese people are at increased risk for illness and death due to violence and injury.

diabetes

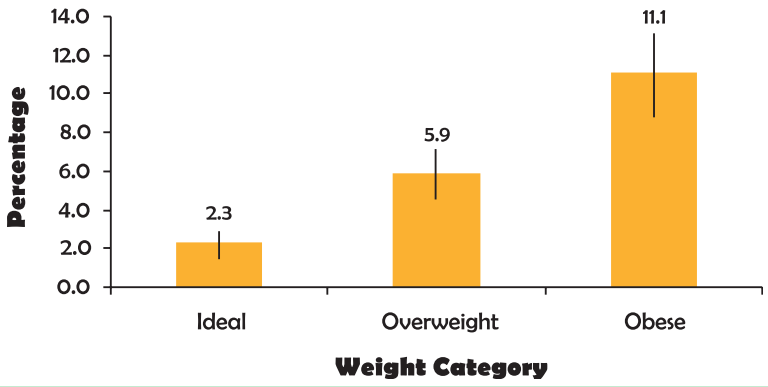
Obesity can lead to type 2 diabetes. Obesity is a major risk factor for developing type 2 diabetes (previously called noninsulin-dependent diabetes mellitus or maturity-onset diabetes). Type 2 diabetes is often considered a lifestyle disease and is associated with overweight and obesity, physical inactivity, and poor dietary habits. The prevalence of diabetes is dramatically higher in obese and overweight people. (See Figure 6.) In fact, nationally 80 percent of people with diabetes are overweight.[22,23]

Diabetes significantly increases the risk for heart disease and stroke, and is the leading cause of new cases of blindness among working age adults. In 2000-2001 about 82,000 nontraumatic lower-limb amputations were performed annually among people with diabetes.[24,25]

The prevalence of diabetes and obesity increased dramatically from 1989-2004, in part due to the increase in obesity during the same time period. (See Figure 7.) Several factors are contributing to the increased prevalence of diabetes: an increase in the precentage of people who are obese, an increase in the number of people being screened, and diagnosis earlier in life. Additionally, the increase in the proportion of racial and ethnic minorities in the population (who are at higher risk for diabetes) leads to a higher overall incidence of diabetes.

Type 2 diabetes, once considered an adult disease, is now also seen in children. It is estimated that almost one-half of all new childhood diabetes cases are classified as type 2.[26] Evidence suggests this increase is a result of the emerging childhood obesity epidemic. Children with diabetes will potentially be affected by the burden of diabetes for a greater proportion of thier lives compared to adults with diabetes. These diabetic children will require expensive, potent, and sometimes complicating medication for most of thier lives. The impacts on their health and on the health care system, will be significant.[26]

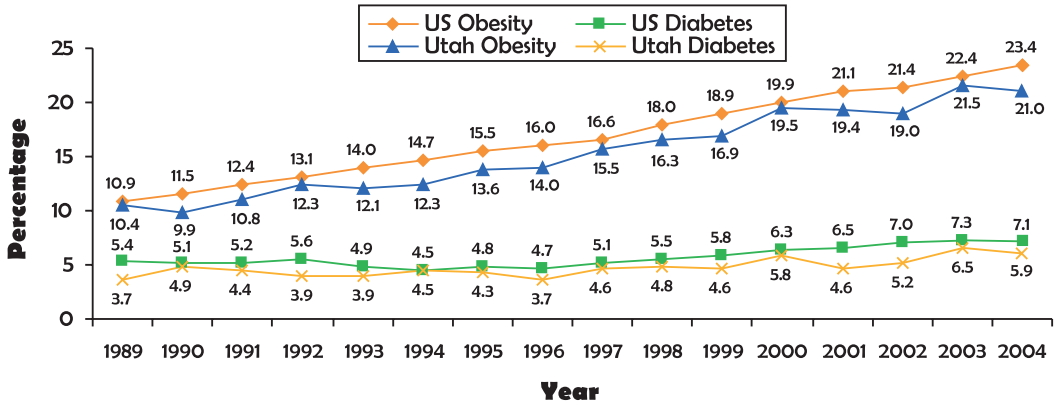
Figure 6. Percentage of Adults With Diabetes by Weight Category, Utah 2004



Source: Utah BRFSS 2004; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

Figure 7.

Adult Diabetes and Obesity Prevalence Over Time, Utah and US 1989-2004



Source: BRFSS 1989 to 2004; Age-adjusted to the 2000 population.
Obese is defined as a BMI of ≥ 30.

hypertension, stroke, and heart disease

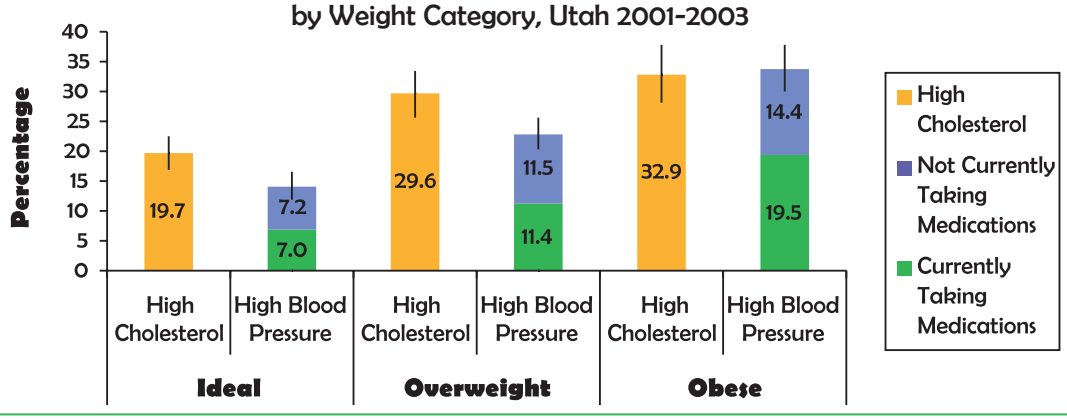
Being overweight or obese increases the risk of high cholesterol, hypertension (high blood pressure), cardiovascular disease, angina, heart attack, and stroke.

The prevalence of high cholesterol is greater in overweight and obese adults than those of ideal weight. (See Figure 8.) The most recent data show that 32.9 percent of Utahns who were obese had high cholesterol levels compared to 19.7 percent of those who were at their ideal weight. This is also true for high blood pressure. In Utah, 33.9 percent of people who were obese had high blood pressure, compared to 14.2 percent of those who were at their ideal weight. Since high cholesterol and high blood pressure are associated with cardiovascular disease, angina, heart attack, and stroke, it is important to maintain both cholesterol levels and blood pressure within normal ranges. Unfortunately, across all weight categories, there appears to be a fairly large number of people with untreated high blood pressure.

Obese people have more angina (heart pain) than those at ideal weight. There may

Figure 8.

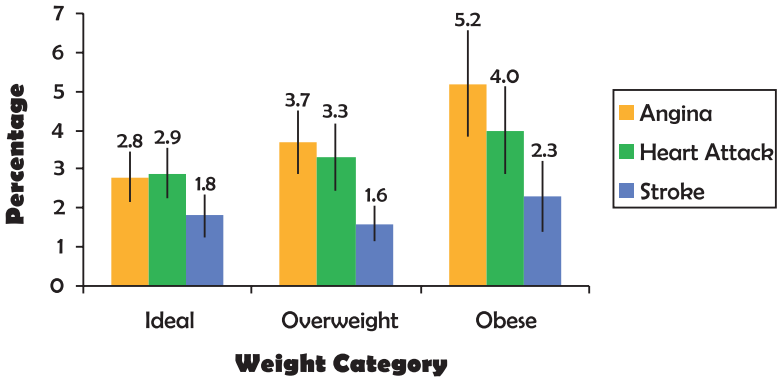
Percentage of Adults with High Cholesterol or High Blood Pressure by Weight Category, Utah 2001-2003



Source: Utah BRFSS 2001 to 2003; Age-adjusted to the 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

Figure 9.

Percentage of Adults with Angina, Heart Attack, or Stroke by Weight Category, Utah 2001-2003



Source: Utah BRFSS 2001-2003; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

also be an increased risk of heart attack in obese people compared to those at ideal weight. (See Figure 9.)

Obesity in youth is also related to elevated blood cholesterol levels and high blood pressure which could lead to cardiovascular disease in young adults.[27]

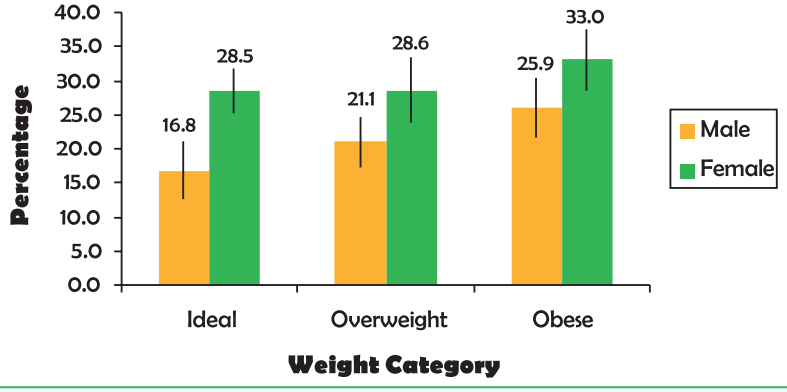
arthritis

Being overweight or obese increases the risk for certain types of arthritis. Osteoarthritis, a slowly evolving degenerative disease, is the most common form of arthritis, and is a major cause of pain and physical disability in older adults.

The relationship between obesity and osteoarthritis may be explained in two ways. First, a person who is overweight or obese has increased force exerted on their joints, which may result in a breakdown of cartilage; and second, an overweight or obese person may have increased bone mineral density, which is a possible risk factor for osteoarthritis.[28] Although this may explain damage to the knee and/or hip joints, it does not explain increased arthritis of the hand observed in overweight or obese persons.

Figure 10.

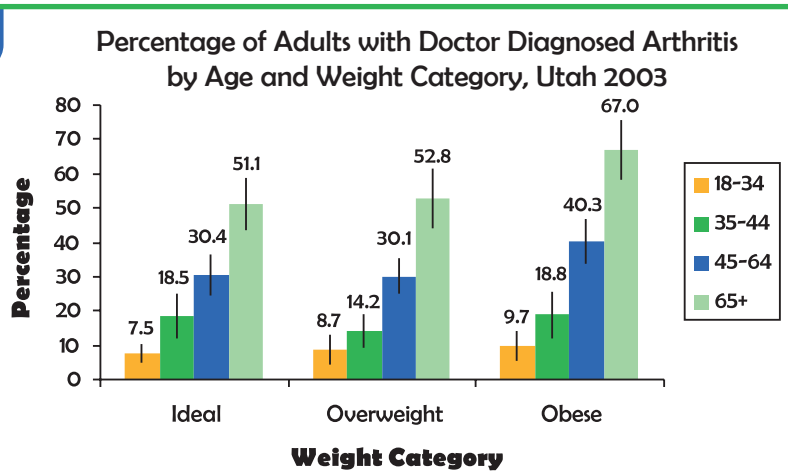
Percentage of Adults With Doctor-Diagnosed Arthritis by Gender and Weight Category, Utah 2002-2003



Source: Utah BRFSS 2002-2003; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

Utah survey data (BRFSS 2002-2003) suggest that overweight or obese adults may be more likely to have arthritis than adults at ideal weight. (See Figure 10.) Additionally, women are more likely to report arthritis than men across all weight categories.

Figure 11.



Source: Utah BRFSS 2003.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

The percentage of adults with arthtitis increases with age for all weight categories. (See Figure 11.) Across all age groups obese adults appear to be more likely to report arthritis than those at ideal weight.

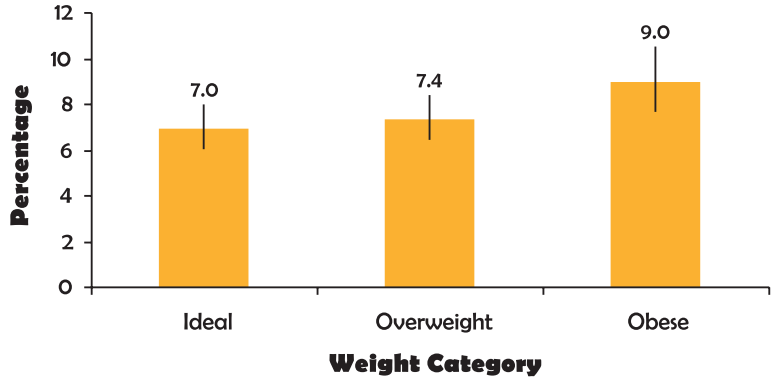
asthma

Asthma leads to reduced physical activity.
Childhood and adult asthma is a growing health problem. Asthma is one of the ten leading chronic conditions that results in physical activity limitation.

In 2004, about nine percent of Utahns were under medical care for asthma, including about eight percent of children.[29] Nationally, 12.5 percent of children <18 years of age have had asthma diagnosed at some time during their lives.[30] About 223,000 Utahns are currently being treated for asthma, and 61,500 of these people are aged 18 or under.[29] A total of 1,577 Utahns were hospitalized with asthma during 2003.[31]

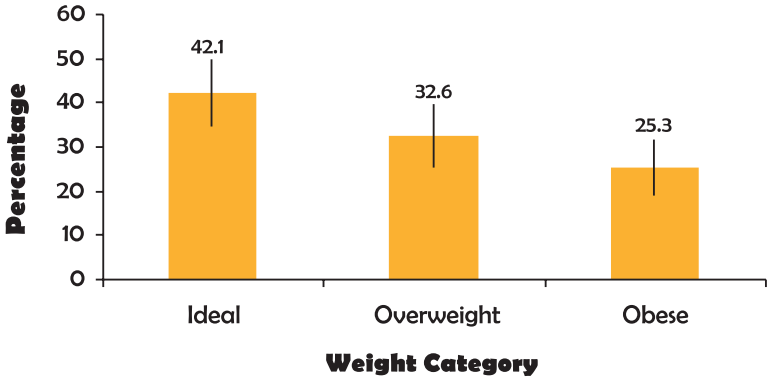
It appears that more obese adults have asthma compared to those at an ideal weight. (See Figure 12.) Although it is unclear whether obesity leads to asthma or asthma leads to obesity, unmanaged asthma may result in a decrease in activity that can lead to weight gain. (See Figure 13.) Additionally, restricted physical activity may lead to asthma since only physical activity allows the lungs to fully expand. Children who are overweight

Figure 12.



Source: Utah BRFSS 2002-2004; Age-adjusted to 2000 population.

Figure 13. Percentage of Adults with Asthma Who Met Physical Activity Guidelines by Weight Category, Utah 2001 and 2003



Source: Utah BRFSS 2001 and 2003; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

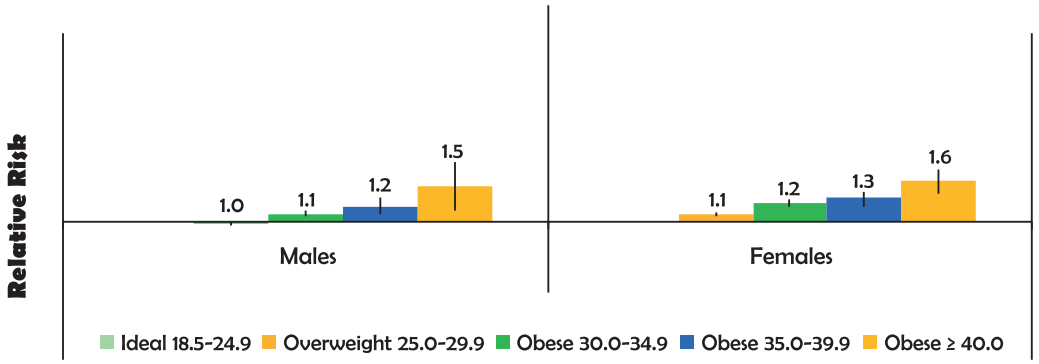
may have a higher prevalence of respiratory symptoms, including asthma. Children with asthma and higher measures of BMI may miss more school and take more prescription medications than children without asthma.

cancer

Obesity is associated with cancers of the colon, breast, endometrium (lining of the uterus), kidney, and esophagus. Since some studies show a decreased risk for cervical, gallbladder, prostate, and thyroid cancer in people with low-fat diets and/or a higher level of physical activity, an obesity link to these diseases is also suspected. Obesity is associated with Hodgkin's disease in men; non-Hodgkin's lymphoma in women; and cancers of the pancreas, bladder, ovary, brain, liver, small intestine, and larynx in both men and women.[32-38]

Overall a 33 percent excess incidence of cancer was seen in obese persons.[33] Studies have also shown that overweight and obesity may also increase the risk of death from cancer.[34, 39-40] (See Figure 14.) One study concluded that the current pattern of obesity accounts for 14 percent of cancer deaths in men and 20 percent of cancer deaths in

Figure 14. Mortality Risk from Any Cancer by Gender and Weight Category, US 1982-1998



Source: Cancer Prevention Study II 1982 to 1998; New England Journal of Medicine April 24, 2003 volume 348, No 17.[40]

women.[40] Unfortunately, only one of four individuals is aware that obesity is a cancer risk.[32]

Obesity may play a significant role in predisposing men and women to certain types of cancer. For example, obese men have a 40 percent higher risk of developing colon cancer than do men at ideal weight.[34] Obese men are also less likely to survive prostate cancer than men who are not obese.[38]

Prior to menopause, obese women have a lower risk of developing breast cancer than do women at ideal weight, but after menopause this tendency reverses. Postmenopausal obese women are 150 percent more likely to develop breast cancer.[35] Obese women are also two to five times more likely to develop endometrial cancer than are non-obese women, particularly if they are postmenopausal.[37] Distribution of body fat, especially in the abdominal area, may increase breast cancer risk for women.[35,36] Finally, obese women's overall risk of cancer may be higher than men's; in a long-term study of almost 30,000 patients, 37 percent of obese women developed cancer compared to 25 percent of obese men.[33]

violence & injury

Obesity can increase the risk of injury. Obese and overweight people may be at higher risk for injury and deaths related to motor vehicle crashes (MVC). Injury can result from the use of emergency medical equipment that is not designed to handle obese people. Additionally, obese people may be more vunerable to weight-based teasing and social isolation, thereby resulting in low self-esteem, depression, and suicide.[41]

Obese people are less likely to wear seatbelts when driving. Motor vehicle crashes are the leading cause of injury deaths in Utah and the second leading cause of injury hospitalizations in the US.[42] BMI is associated with an increased risk of injury or death resulting from MVCs. People who are considerably larger than the 50th percentile in height and weight are at increased risk for more severe injuries and even death resulting from MVCs.[43-48] Obese people were almost twice as likely to die or to be seriously injured in a MVC than those with a BMI less than 20.[47] According to the Royal Automibile Club (RAC) Foundation, overweight persons are more likely to suffer from sleep disorders, such as sleep apnea, which increases the likelihood of falling asleep while driving.[47] Obese persons are also

more difficult for emergency personnel to remove from crashed vehicles, and using medical stretchers designed for people at ideal weights may result in injury for both overweight or obese patients, and emergency responders.[49]

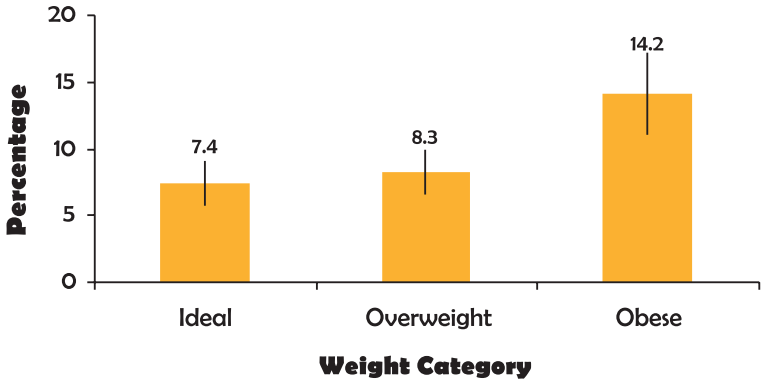
Since motor vehicle manufacturers design vehicle cabins and equipment based on the average male, overweight and obese persons are at increased risk for injury and death resulting from MVCs.

Based on the Utah BRFSS data, obese Utahns use seatbelts less often than non-obese people. (See Figure 15.) They are nearly twice as likely to report "Sometimes, Seldom or Never" when asked about current seat belt usage than are those who are at their ideal weight (14.2 percent compared to 7.4 percent).

Overweight and obese children suffer early and systematic discrimination, resulting in low self-esteem and depression, which continues into adolescence.

Being overweight or obese may contribute to teen suicide. According to the Center for Disease Control and Prevention, suicide is the second leading cause of teen death in Utah.[41] A study of junior high and high school students demonstrated that teasing about body weight was consistently associated with low body satisfaction, low self-esteem, depression, suicidal thoughts, and suicide attempts. Rates of suicidal thoughts and attempts associated with weight-based teasing were two to three times higher among those who were teased by peers and family compared with those who were not teased.[41]

Figure 15. Percentage of Adults Who Wear Seatbelts "Sometimes, Seldom, or Never" by Weight Category, Utah 2002



Source: Utah BRFSS 2002; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

Futhermore, it is well documented that many obesity-related chronic diseases, such as arthritis, heart disease, and stroke, often result in physical disability and difficulty participating in social activities. This can isolate individuals mentally and emotionally and may contribute to mental health problems.

Chapter Three: Lifestyle and Genetic Factors

This chapter addresses lifestyle factors such as good nutrition and adequate physical activity, that lead to good health and, that help to maintain a healthy weight. Other lifestyle factors, such as breastfeeding and tobacco use are also discussed since it is known that they can influence weight. Finally, the genetic factor as it relates to obesity is discussed.

Good nutrition and adequate physical activity are necessary to achieve and maintain a healthy weight. Good nutrition is essential for childhood growth and development as well as overall health. Behaviors that promote good eating habits, which lead to good health, should start at the beginning of life with breastfeeding and continue through childhood into adulthood.

The 2005 Dietary Guidelines for Americans recommend that My Pyramid, located at *www.mypyramid.gov*, be used as a guide for good nutrition for people two years of age and older. Recommendations emphasize the daily intake of whole grains, fruits, and vegetables. A diet low in saturated fat, cholesterol and sugar, moderate in total fat is recommended.[50] The recommended daily caloric intakes are as follows:

- Sedentary women and some older adults: 1600 calories daily
- Most children, teenage girls, active women, and sedentary men: 2200 calories daily
- Teenage boys, active men, and very active women: 2800 calories daily

Average daily caloric consumption (for individuals two years of age and older) has increased from 1,876 calories in 1977-78 to 2,043 calories in 1995.[51] Results of a national survey (1999-2000 NHANES) showed that men consumed an average of 2,475 calories daily and women consumed an average of 1,833 calories daily.[52] Although these values were below the recommended daily calorie intake for active men and women, the majority of people are sedentary rather than active and it is the steady increase in average caloric intake over time that could result in increase weight. A daily increase of 167 calories could result in a weight gain of 17 pounds in one year.

In terms of weight management, the key recommendations are to maintain body weight in a healthy range by balancing calories from foods and beverages with calories expended, and to prevent gradual weight gain over time by making small decreases in food and beverage calories and increasing physical activity. There is much speculation that the increased amount of time children spend watching television, playing video games, and using computers is a major cause of overweight in children.[53,54]

Infancy and Breastfeeding

Breastfeeding may reduce the risk of being overweight or obese later in life. Several studies suggest that breastfed infants gain less weight and are leaner at age one than formula fed infants.[55] There is considerable evidence that the relationship between breastfeeding and

lean body weight continues throughout childhood. It may be that breastfed children learn to self-regulate their intake of food better than non-breastfed children.[56,57]

Although the role of breastfeeding in preventing childhood obesity is moderate compared to parental overweight, poor dietary practices, and physical inactivity,[58] efforts to increase breastfeeding may help to decrease the rate of children who are overweight or at risk of becoming overweight.

The American Academy of Pediatrics' Committee on Nutrition has identified not breastfeeding as a risk factor for developing obesity later in life: "Extent and duration of breastfeeding have been found to be inversely associated with risk of obesity in later childhood, possibly mediated by physiologic factors in human milk as well as by the feeding and parenting patterns associated with nursing." [58]

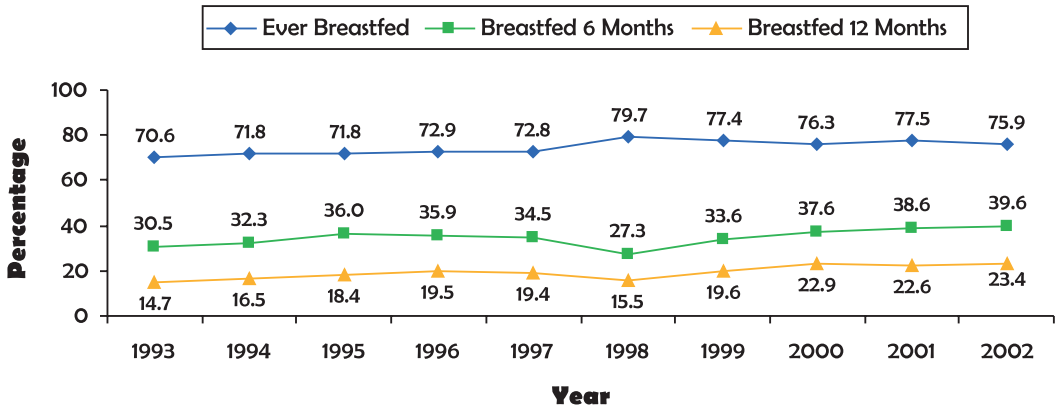
According to the 2002 Pediatric Nutrition Surveillance Survey (PedNSS), 52.5 percent of mothers in the US attempted breastfeeding; 20.8 percent breastfed for at least 6 months; and 12.3 percent breastfed for at least 12 months. In Utah, the rates are significantly higher: 39.6 percent breastfed for at least 6 months (ranked first in the nation), and 23.4 percent breastfed for at least 12 months. The most striking increase was for mothers who breastfeed for 12 months or longer (14.7 percent in 1993 to 23.4 percent in 2002). (See Figure 16.)

Children and Adolescents

The average daily caloric intake of children and adolescents increased from 1,900 calories per day in 1977-78 to 1,964 calories per day in 1994-96. Although this represents an increase in only 64 calories per day, this could result in a weight gain of 6.7 pounds in a year.[59]

From 1994-96, only two percent of school-aged children met the US Dietary Guidelines for all five major food groups: 14 percent for fruit, 17 percent for meat, 20 percent for vegetables, 23 percent for grains, and 30 percent for dairy.[60] The same survey indicated that over two-thirds of children ate more than the recommended number of servings of saturated fat and total fat. Added sugars, for example, the sugar found in carbonated beverages (soda), contributed to 20 percent of overall

Figure 16. Trends in Breastfeeding Children Less Than Five Years of Age, Utah 1993-2002



Source: Utah Pediatric Nutrition Survey 1993-2002.

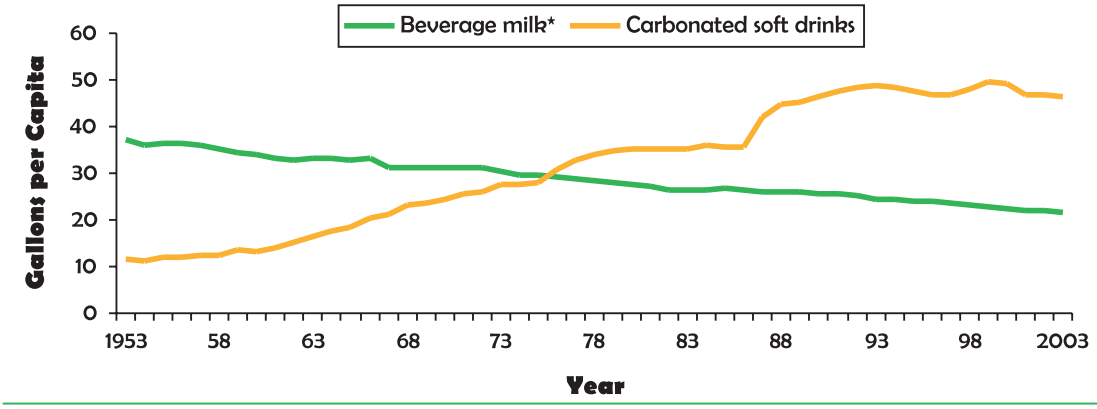
caloric intake.[60] Increased consumption of soda has been linked to obesity[61] and as soda drinking has increased, milk drinking has decreased. (See Figure 17.)

The United States Department of Agriculture's (USDA) food consumption survey showed that since 1977 fewer and fewer school-age children (6 to 17 years of age), regardless of age and gender, have consumed milk, while the consumption of soft drinks has risen tremendously. The proportion of children obtaining soft drinks at school or elsewhere more than doubled from 2.5 percent in 1977-78 to 5.8 percent in 1994-98. The increase is higher among children in middle and high schools. Research has shown that for every 1-ounce decline in milk consumption there is a corresponding 4.2-ounce rise in soft drink consumption, resulting in an increase of 31 calories and a decrease of 34 mg of calcium.[62]

There is no difference between the national and Utah rates of adolescents who eat five or more servings of fruits and vegetables a day (22 percent nationally and 20 percent in Utah in 2003), though the percentage appears to be decreasing over time. (See Figure 18.)

Figure 17.

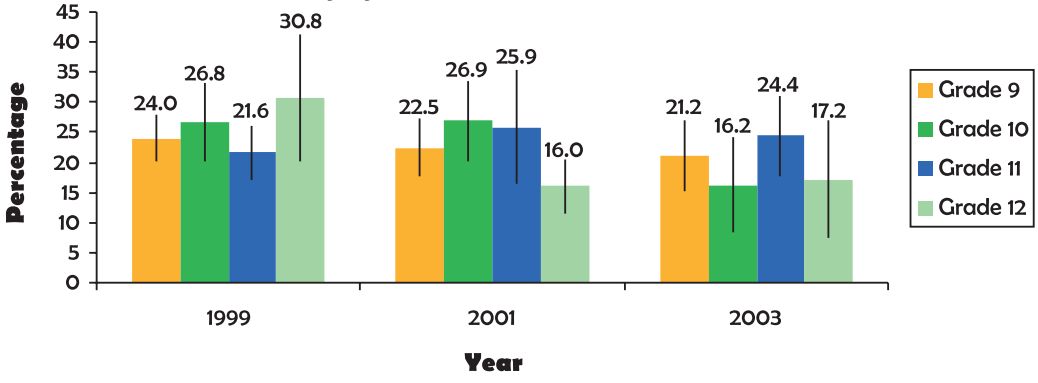
Milk and Carbonated Soft Drink Consumption by Year, US 1953-2003



Source: USDA/Economic Research Service
*Includes 2% reduced fat milk, low fat milk (1%, 0.5%, and buttermilk), and skim milk (fat free)
Note: Caculated from unrounded data

Figure 18.

Percentage of High School Students Who Ate Five or More Servings of Fruits or Vegetables a Day by Grade and Year, Utah 1999, 2001, and 2003



Source: Utah YRBS 1999, 2001, and 2003.

Adults

Simply put, adults are eating too much. The average number of calories consumed by adults (18 years and older) per day has increased from 1,866 calories per day in 1977-78 to 2,047 calories per day in 1994-96.[59] Although this represents an increase of only 181 calories per day, this could result in a weight gain of 18.9 pounds in a year. Results of the National Health and Nutrition Examination Survey (NHANES) 1999-2000 show that men consumed an average of 2,475 calories daily (median 2,281) and women consumed an average of 1,833 calories daily (median 1,711).[52]

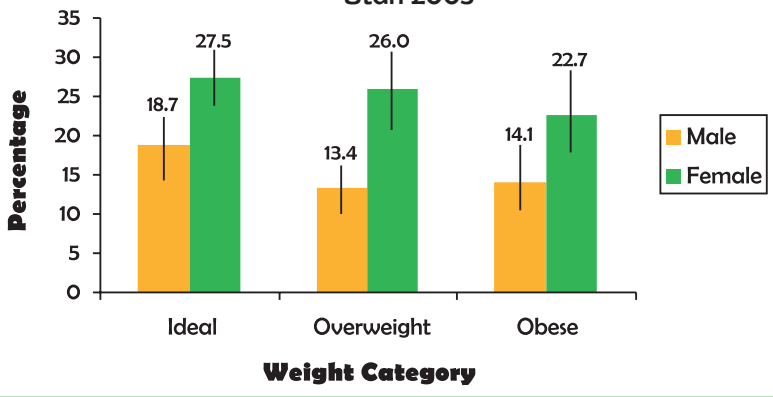
Overall, the percent of Utah adults who eat five or more servings of fruits or vegetables per day has decreased over time. In 1998, 26.7 percent of adults in Utah ate five or more servings of fruits or vegetables per day, compared with 20.6 percent in 2003.[18] Both men and women are eating fewer fruits or vegetables, although women eat more fruits and vegetables compared to men; there did not appear to be a statistical difference across weight categories. (See Figure 19.) In 1998, 22.3 percent of men and 30.9 percent of women ate five or more servings of fruits or vegetables per day. By 2003 that percentage was down to 15.6 percent for men and 25.2 percent for women, a statistically significant decrease.[18]

Overall

Overall, there has been an increase in soda consumption and a decrease in milk consumption over time. (See Figure 17.) A recent study found that children who drank three or more glasses of milk per day experience larger weight gain per year than those who drank two glasses or less, and that replacing one soda with one glass of milk resulted in no annual weight loss.[63] There has also been a dramatic increase in cheese consumption. (See Figure 20.)

There has been an increase in the number of meals and snacks eaten outside the home (16 percent in 1977-78 compared to 27 percent in 1995). (See Figure 21.) If the current trend continues, by 2010 about two-thirds of all meals and snacks will be eaten away from home. Meals eaten outside the home (including schools, fast food, and restaurants) tend to have larger portion sizes and be higher in fat content and total calories than those eaten at home. Whereas the percent of total calories from fat in meals prepared at home and away from home was 41 percent in 1977-78, there has been a greater decrease in calories from fat for meals eaten at home compared to those away from home (31.5 percent versus 37.6 percent in 1995).[51]

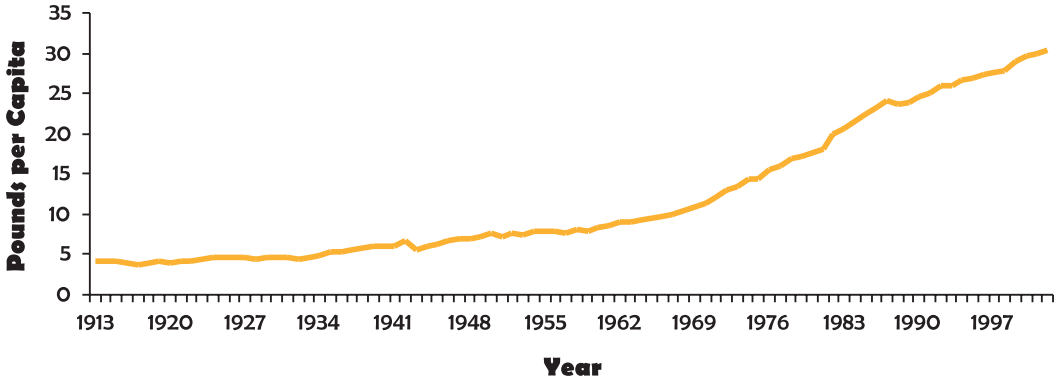
Figure 19. Percentage of Adults Who Ate Five or More Servings of Fruits or Vegetables a Day by Gender and Weight Category, Utah 2003



Source: Utah BRFSS 2003; Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

Figure 20.

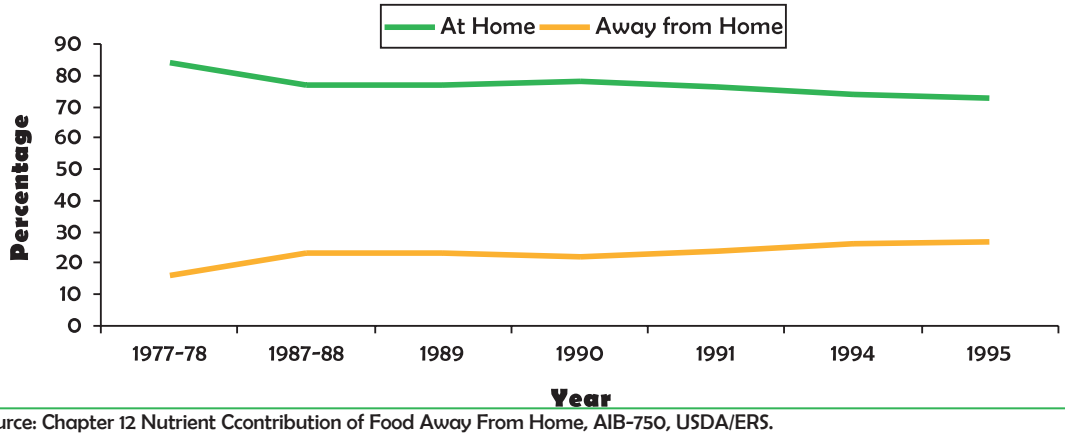
Cheese Consumption by Year, US 1913-2002



Includes American, Italian, and Other Cheeses
Source: USDA/Economic Research Service

Figure 21.

Percentage of Meals/Snacks Eaten Either at Home or Away from Home, US 1977-1995



Source: Chapter 12 Nutrient Ccontribution of Food Away From Home, AIB-750, USDA/ERS.

physical activity

Regular physical activity is crucial for maintaining a healthy weight. A sedentary lifestyle plays a large role in a person's likelihood to be overweight or obese. Over time physical inactivity can shorten life expectancy, decrease quality of life, and limit independence. Physical inactivity is associated with obesity, heart disease, diabetes, colon cancer, high blood pressure, osteoporosis, anxiety, and depression.[64]

Children seem to become more sedentary every year, watching television and playing video games instead of biking to the playground or playing kickball in the backyard with their friends. Even schools have stopped emphasizing fitness. Nationally, in some school districts, physical education has been discontinued because of underfunding and pressure to obtain high test scores on reading and mathematics.

Children need regular exercise to build strong bones and muscles. Exercise also helps children sleep well at night and stay alert during the day. Such habits established in childhood help adolescents maintain healthy weight despite the hormonal changes, rapid growth, and social influences that often lead to overeating. Active children are more likely to become fit adults.

Children

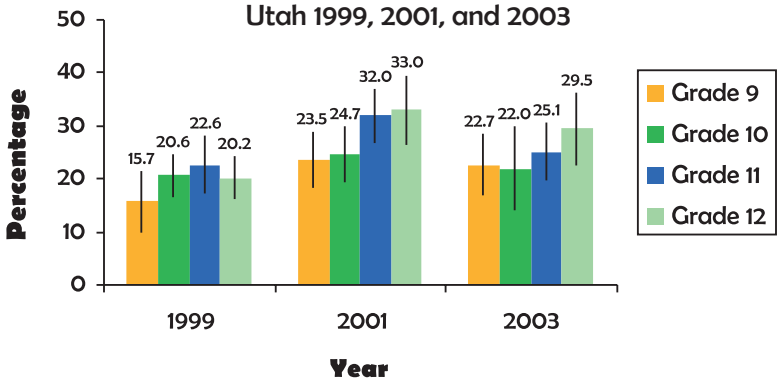
Nationally, the percent of public high school students who did not get the appropriate amount of physical activity appears to have increased over time (from 30.5 percent in 1999 to 33.4 percent in 2003 YRBS). In fact, American children spend more time watching television or videotapes and playing video games than doing any other activity except sleeping.[53] In Utah, a similar trend was observed. However, small sample sizes render it impossible to determine if the change from 1999 to 2003 represents a significant increase in the percent of high school students who did not get appropriate physical activity. (See Figure 22.)
It is thought that time spent watching television, playing video games, and using computers is a major cause of excess weight in children. Media use contributes to increases in weight by replacing time that would normally have been spent doing physical activity, and by encouraging snacking and eating during television viewing. Television food advertising also encourages snacking and eating of foods high in calories and low in nutritional value.

Adults

According to 2003 BRFSS data, Utah is ranked third in the nation for getting the recommended amount of physical activity. Utah men (56.3 percent) and women (54.7 percent) were equally likely to report getting the recommended amount of physical activity. Conversely, 44.5 percent of Utahns did not get the recommended amount of physical activity. Examination of physical activity by age and sex showed that, for 2001 and 2003 combined, there were no differences between the sexes in terms of not getting the recommended amount of physical activity, and as expected, older adults were less active than younger adults. (See Figure 23.)

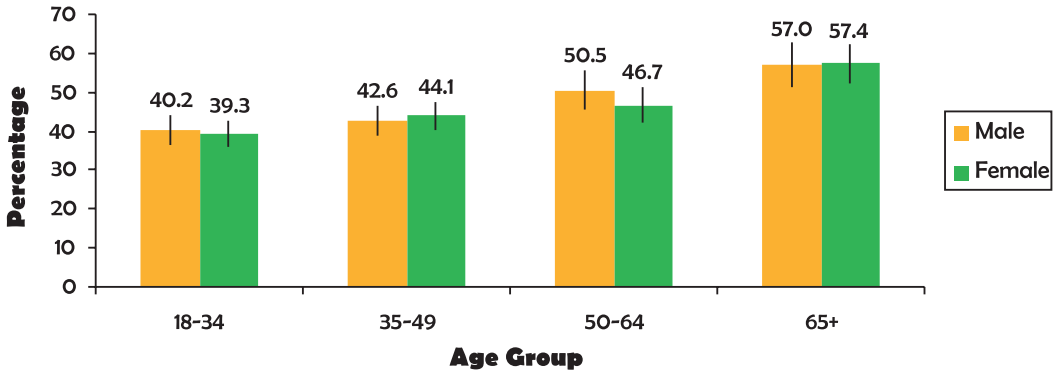
In 2003, in Utah, 48.6 percent of overweight adults and 32.5 percent of obese adults were not trying to lose weight. People who received advice from health care professionals to lose weight were more likely to lose weight than those who were not advised. Yet among those obese Utah adults who were trying to lose weight, less than half (35.3 percent) reported that they had been advised by a health professional to do so (BRFSS 2003).

Figure 22. Percentage of High School Students Who Did Not Participate in Appropriate Physical Activity for the Past Seven Days by Grade Utah 1999, 2001, and 2003



Source: Utah YBRS 1999, 2001, and 2003.

Figure 23. Percentage of Adults Not Getting the Recommended Amount of Physical Activity by Age and Gender, Utah 2001 and 2003



Source: Utah BRFSS 2001 and 2003 combined.
The recommended amount of physical activity is light or moderate physical activity for ≥ 30 minutes ≥ 5 times per week or vigorous physical activity for ≥ 20 minutes ≥ 3 times per week.[7]

media use

The television is on for seven hours and 40 minutes per day in the average American home, and the average American spends over four hours each day watching it. The average American one year old child watches six hours of television per week; the American Pediatric Association now recommends that children under two years old not watch any television. The average American child between two to 17 years of age spends 19 hours and 40 minutes each week watching television; 56 percent of children eight to 16 years old have a television in their bedroom; and 36 percent of children six years old and younger have a television in their bedroom.[65]

Forty percent of Americans report that they always or often watch television while eating dinner. The average American child views 40,000 television commercials per year and 97 percent of American children aged six years and younger have products based on characters from television shows or movies.[66]

Child Television Viewing

Although the size of the association between television viewing and obesity is small, the behavior is still an important target because children's exposure to television is enormous.[66-68] A study showed that when third and fourth graders were taught to watch less television, their BMI decreased by about one-half of a BMI unit.[69] When taken together, the average American child spends more than three years of his/her life, between the ages of two and 17 years, watching television.[66]

Nationally the percent of public high school students who watch three or more hours of television per day on an average school day has remained fairly

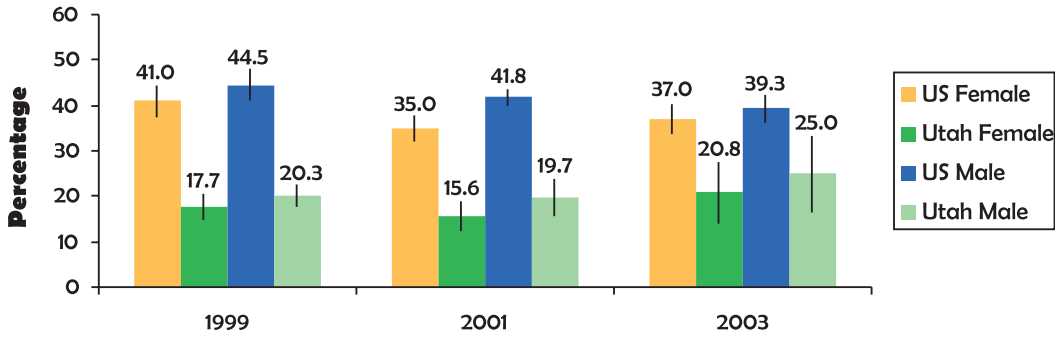
constant from 1999 (42.8 percent) to 2003 (38.2 percent). Although the rates were lower for Utah, they remained fairly constant: 19.3 percent for 1999 and 22.9 percent for 2003. (See Figure 24.)

It has been demonstrated that altering television viewing behavior affects weight gain and may impact weight loss.[67-70] In one study, obese children who were asked to reduce their television viewing time over a period of six months demonstrated significant decreases in body mass index, triceps skin fold thickness, waist circumference, and waist-to-hip ratio.[69] In another study, obese children who decreased sedentary activities and followed a restricted diet lost more weight than obese children who were rewarded for increasing physical activity.[70] These studies suggest that a sedentary lifestyle is a significant risk factor for overweight and obesity.

Adult Television Viewing

A survey conducted in 1997 showed that the average adult man spent approximately 29 hours per week watching television and the average adult female spent 34 hours per week watching television.[71] There is research to suggest that sedentary behaviors, especially prolonged television viewing is directly related to obesity and diabetes risk in adult women. Light- to moderate-intensity activity substantially reduces the risk.[72]

Figure 24. Percentage of High School Students Who Watch Three or More Hours of Television per Day on an Average School Day by Gender, Utah and US 1999, 2001, and 2003



Source: YRBS 1999, 2001, and 2003.

tobacco use

The average weight gain for Utah former smokers is estimated to be seven pounds.[18]

Research shows that quitting smoking has major and immediate health benefits for people of all ages.[73]

Unless smoking cessation is accompanied by a diet and exercise program, quitting smoking is often followed by weight gain. The average smoker gains five pounds after cessation, and a small percentage of smokers gain more than 20 pounds.[73]

Concerns about gaining weight may deter people from attempting to quit smoking and may promote relapse. However, weight gain that follows tobacco use cessation is considered a negligible health threat compared to the risks associated with continued tobacco use.[73] Furthermore, quitting smoking may help individuals to be physically active and maintain a healthy weight by improving respiratory health.

Weight gain after quitting smoking appears to be a result of increased food (or alcohol) consumption and of metabolic adjustments. Further research on the behavioral and physiological mechanisms of post-cessation weight gain is necessary to enhance comprehensive tobacco cessation programs to address diet and exercise.[74]

Former adult smokers are more likely to be obese or overweight than current smokers or people who never smoked. (See Figure 25.)

In addition to causing many life-threatening diseases (such as lung cancer, emphysema, and heart disease), smoking can interfere with physical activity. A 1994 Surgeon General report found that smoking impairs young people's physical fitness in terms of both performance and endurance. The same report also showed that smoking among youth can hamper the rate of lung growth and the level of maximum lung function.[75]

Figure 25. Percentage of Adults Who Were Overweight or Obese by Smoking Status, Utah 2004

	Overall	Smoking Status		
		Current Smokers	Former Smokers	Never Smoked
Overweight or Obese	56.0%	52.2%	61.2%	55.5%
Obese	21.1%	17.0%	25.8%	20.5%

Source: Utah BRFSS 2004. Age-adjusted to 2000 population.
Overweight is defined as a BMI of 25.0-29.9 and obese is defined as a BMI of ≥ 30.

genetics

Currently less than five percent of all obesity cases can be explained by mutations in single genes.[76,77] Although environmental factors play an important role in obesity, genetic factors may also contribute to the development of obesity.[76-79] Rare forms of severe early-onset obesity, such as the Bardet-Biedl and Prader-Willi syndromes, are caused by mutations in single genes.[76-79] Studies with both animals and humans have identified variations in six genes that can lead to the development of these rare forms of obesity.[76-79]

The majority of persons who are obese likely suffer from the condition because of a complex interaction between multiple genes, behavioral and environmental factors, and cultural and socioeconomic influences. Identifying the specific genes involved in common forms of obesity is a difficult task. However, family history is one genomic tool that can help to identify persons at an increased risk of obesity. Family history reflects genetic susceptibility as well as shared cultural, behavioral, and environmental risk factors that contribute to disease.[80,81] Research has shown a person's risk of obesity doubles if they have a first-degree relative who is overweight (BMI greater than or equal to 25), triples if their relative is moderately obese (BMI greater than or equal to 30), and increases five times if their relative is severely obese (BMI greater than or equal to 40).[77] It is important to remember that even though a positive family history may increase a person's risk of obesity, behavioral, environmental, cultural, and socioeconomic risk factors are modifiable.

Several genetic advances may potentially help curb the rapid increase of obesity. Pharmacogenomics and nutrigenomics are new scientific fields that use genomic information to personalize medicine and dietary recommendations to prevent or effectively treat the condition.[77] Genetic testing may also be used to identify those with a genetic predisposition to obesity in order to maximize prevention and treatment.[77] Research on taste perception may also be beneficial in developing effective prevention strategies because taste perception is genetically influenced and may affect a person's diet choices.[77,78]

While these advances may provide new approaches to dealing with obesity, it should be noted that genetics cannot explain the dramatic increase in the number of overweight and obese people. The 103 percent national increase in the number of obese people over 14 years (from 1990-2004) cannot be explained by genetic shift. This dramatic increase in a relatively short time period points towards changes in behavioral, environmental, social, and/or socioeconomic factors. Understanding the genetic component of the disease is just one step in the fight against obesity. Despite the power of genetics, the best weapon we have against obesity is a healthy diet and physical activity, even for those with positive family histories.

Chapter Four: Systems Issues and Envrionmental Barriers to Overweight and Obesity Control

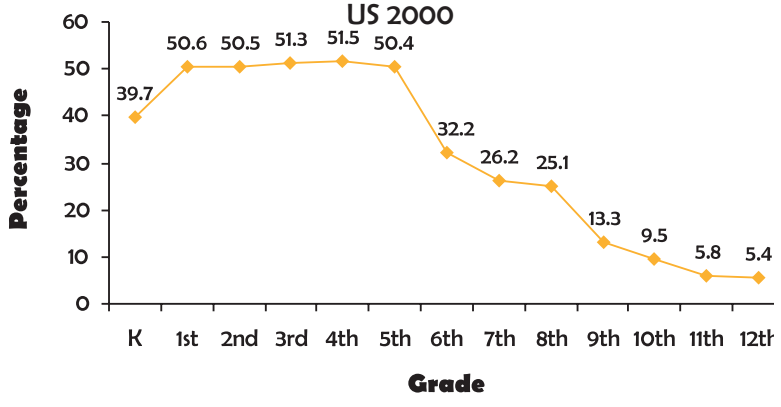
Although overweight and obesity are mainly a result of individual behaviors and choices, the environments in which we live affect our behaviors and choices. The school environment, the workplace environment, the neighborhood environment, and meal consumption away from home are all environments that can influence our nutrition and physical activity choices.

the school environment

Children spend a large portion of time in school. Therefore, their food choices are influenced by the eating environment created within schools. Over the past decade, the most striking school food environment-related trends were decreased student participation in the National School Meals Program and increased availability of less nutritious "competitive foods", those available in addition to United States Department of Agriculture (USDA)-provided school meals.[82] Studies indicate that while school meal programs contribute to better nutrition and healthier eating behaviors for the participants, the types of competitive foods sold in schools undermine the nutritional integrity of the school meal programs and discourage participation.[60,83,84] Generally, children replace school meals with less nutritious competitive foods, thereby increasing the risk that their daily dietary intake will be inadequate. Also, if children use less nutritious competitive foods to supplement their school meals then unhealthy weight gain can result.[84]

Nationally only about half of elementary schools and less that 15 percent of high schools require students to particpate in physical eduation. (See Figure 26.) Only one-quarter of high school students participate in daily physical education, and only 19 percent of high school students are active at least 20 minutes per day during physical education class.[85] There are many benefits to physical education, such as development of motor skills needed for enjoyable participation in physical activities, promotion of physical fitness, increased energy expenditure, and promotion of a positive attitude toward an active lifestyle.[85]

Figure 26. Percentage of Schools that Require Physical Education by Grade, US 2000



Source: Journal of School Health, Volume 71, Number 7, September 2001.

Competitive Foods and Vending Machines

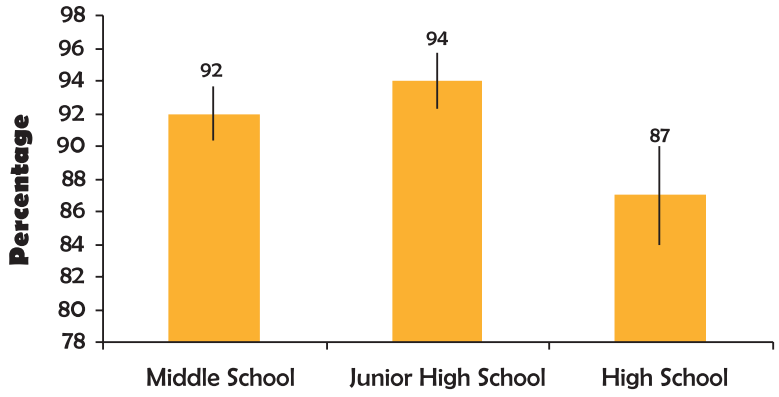
A Department of Agriculture (USDA) report to Congress found that competitive foods have lower nutritional quality than school meals. Competitive foods may add to over-consumption of food energy, dietary fat, saturated fat, added sugars, and sodium, and under-consumption of calcium, fiber, fruits and vegetables, and whole grains.[60] Competitive foods available to school children include: food purchased from off-campus establishments, a la carte sales, vending machines, school stores, canteens and snack bars, fundraising sales, food at school parties, and treats given by teachers to children. These foods are not required to meet the nutritional standards of reimbursable school meals, and studies suggest that they often do not.

Maine does not allow competitive food sales on campus at any time. North Carolina requires that competitive foods must contribute to the nutritional well-being of the child and aid in establishing good food habits.[86]

The Child Nutrition Act of 1966 gave the USDA the power to regulate competitive foods. As the law currently stands, (1) the USDA may not ban the sale of approved competing food items when profits go to the school or to school-approved student organizations, (2) the law limits the regulation of competitive food only to the time and place that government meal programs are being served, and (3) it is unclear if the USDA has any power over competing food that is donated rather than sold. In addition to the federal law, state agencies and school food authorities are allowed to impose additional restrictions on the sale of all food at any time throughout the school and on the disposition of income from the sale of competitive foods. As of 2001, 20 states have imposed additional restrictions on the sale of competitive foods; Utah has not.[86]

A Utah survey conducted in the Fall of 2002 to evaluate the number of vending machines in schools, showed that vending machines were found in most schools. (See Figure 27.) On average, the number of vending machines was highest for senior high schools (average of 12 vending machines per school) and lowest for elementary schools (average of two vending machines per school).

Figure 27. Percentage of Schools with Vending Machines, Utah 2002



Source: Utah Department of Health, Bureau of Health Promotion, Heart Disease and Stroke Prevention Program. (2003). Healthy Kids Ready to Learn: Healthy Choices Vending Machine Inventory, Conducted statewide Fall 2002.

In some cases, competitive foods are believed to be important to the finances of the school or even the school food service itself. Schools have negotiated

contracts with soft drink companies in which schools provide exclusive rights to vending machine sales and event sales, and in some cases guarantee minimum sales.[62]

Lowering prices on lower-fat snacks and increasing prices of higher-fat snacks in Minnesota school vending machines promoted healthier choices without significantly affecting profits.[89]

The 2002 Utah vending machine survey confirmed that school vending machines are filled with less nutritious items. For every healthy choice, there were 14 unhealthy choices; a slightly higher ratio was observed in rural (1:14.2) compared to urban (1:11.7) areas. Snacks were categorized as "healthy" based on total caloric value, amount of saturated fat, sugar, protein, fiber, and nutrient content (calcium, iron, and vitamins A and C). For every milk choice available to students, there were 45 soda choices; there were more milk choices in rural (1:39) areas than in urban (1:53) areas.[87] A healthy food vending pilot project conducted in Utah showed students who had access to healthy food in school vending machines made healthy choices. These data suggest vending machines containing healthy food could be profitable.[88]

Availability of less nutritious competitive foods sends a mixed message to students. When children are taught at home and in the classroom about good nutrition but are surrounded by vending machines, snack bars, and school stores offering low nutrient-dense options, they may perceive that proper nutrition is not important to their health or education. School lunch programs have difficulty competing with the foods that are marketed to children through sophisticated multi-million dollar advertising campaigns. Many students already come to school with preferences for sweetened beverages, salty snacks, and fast foods, and would rather socialize around vending machines.[60] In addition, vending machines in schools may result in stigmatization of lower income children since only students with cash can purchase food from vending machines. As a result, children may perceive school meals as primarily intended for poor children.[60]

Time reserved for lunch periods has been reduced due to academic performance pressures that require more classroom time. In response, students choose quicker, less nutritious foods from vending machines or snack bars. As the number of students increase and budgets decrease, priority is given to classroom space at the expense of lunchrooms.[60]

Physical Education in Schools

Physical inactivity is a risk factor for overweight and obesity in children and adolescents. National data suggest that physical activity decreases as children become older, and that girls are less active than boys.[90] The proportion of

adolescents who participate in daily school physical education has been determined to be a strong predictor of physical activity level.[91]

Nationally, from 1991-2003 there was no change in the percentage of students enrolled in physical education classes between grades nine and twelve. The percentage is similar among boys and girls in every grade.[91]

In Utah, the proportion of adolescents who participate in daily school physical education decreased from 37 percent in 1999 to 26 percent in 2003. Also, the percentage of Utah public high school students who were insufficiently physically active increased from 20 percent in 1999 to 25 percent in 2003.[90] Although there are no Utah data identifying risk by race or ethnicity, national data suggest that whites are typically more active than African-Americans or Hispanic/Latinos.[90]

Results from a 2004 survey of Utah high schools, middle schools, and junior/senior combined schools shows that all schools required some physical education for students in any of grades 6-12. Most schools (80 percent) required that the students take two or three physical education courses during that time period. Although all of the schools required sixth graders to take a physical education class, only 50 percent of the high schools and junior/senior combined schools required twelfth graders to take a physical education class.[92]

Physical inactivity is an independent risk factor for several chronic diseases in adults, and low physical activity has been identified as contributing to the rising prevalence of obesity and type 2 diabetes in young people.[25] The increasing rate of physical inactivity in our society, and the contributions of inactivity to obesity and chronic disease, makes it a major public health problem in children, adolescents, and adults. The precursors of chronic disease are seen frequently in American youth. These include increased elevations in blood cholesterol and blood pressure, excessive body fatness, and insulin resistance. These factors, all affected by physical activity, lead to chronic disease and premature death in adults.

the workplace environment

Since the average American adult spends approximately 40 hours per week at work, it is important to address physical activity in the workplace.
By 1999, 95 percent of national worksites with 50 or more employees offered nutrition, weight management classes, or counseling at the worksite or through their health plans.[7] A study of worksite health promotion programs found that specific interventions at the worksite resulted in employees choosing to reduce the amount of fat calories they consumed and eating more fruits, vegetables, and dietary fiber.[93] Worksite health promotion programs may reduce health care costs, including employer costs for insurance programs, disability benefits, and medical expenses.

Regular physical activity depends in part on the availability and proximity of community facilities and environments conducive to physical activity. Studies

of adult participation in physical activity have showed that facility use generally decreases as the distance from a person's residence increases.[94] People are unlikely to use community resources located more than a few miles away by car or more than a few minutes away by biking or walking.[95,96]

Worksite physical activity and fitness programs provide a way to reach large numbers of adults and have at least short-term effectiveness in increasing the physical activity and fitness of program participants.[97] Evidence that worksite programs are cost-effective is growing. Such programs may reduce employer costs for insurance premiums, disability benefits, and medical expenses. Additional benefits for employers include increased productivity, reduced absenteeism, reduced employee turnover, improved morale, enhanced company image, and enhanced recruitment.[96]

The Utah Worksite Health Promotion Survey conducted in 2001 included responses from 501 businesses from all over the state.[98] The survey included questions on nine criteria which were based on best practices. The criteria were: senior management support, program alignment with strategic business objectives, need-based programming, menu-driven programming, maximizing participation levels, annual health risk appraisal process, use of appropriate incentives, creation of supportive cultures, and creation of supportive environments.

The survey showed that worksites with wellness committees (funded or not) were more likely to have healthy worksite opportunities than those without wellness committees, and large companies (100 or more employees) were 14 percent more likely to have a wellness committee compared to medium-sized companies (50 to 99 employees). Less than half of the companies with wellness committees had a budget for the committee, and about half of these companies had a designated person responsible for the committee.

Both large and medium companies used internal e-mail and/or intranet to distribute health messages. The most common class offered was stress

management, although nutrition/weight management, physical fitness, and tobacco cessation classess were also offered.

Large companies were twice as likely to offer evaluation screenings for blood pressure, cholesterol, physical fitness, body fat/weight, blood sugar, periodic health exams, and nutrition compared to medium companies. Interestingly, medium-sized companies were more likely to have a policy for healthy food options compared to large companies, and 86 percent of companies had an Employee Assistance Program (EAP). (A company worksite evaluation form is found in Appendix E.)

meal consumption away from home

Restaurants, Fast Foods, Convenience Foods, and Portion Sizes

Recent trends in food consumption show an increase in portion sizes,[99] an increase in foods eaten away from home, also in larger portions,[100] and an increase in between-meal snacking.[101] Several different environmental barriers and lifestyle choices may preclude eating nutritious foods in moderate amounts and contribute to obesity.

More Americans are eating meals and snacks away from home. Between 1977-78 and 1995, consumption of food prepared away from home increased from 16 percent to 27 percent of total calories. (See Figure 21, Chapter 3.) If this trend continues, only about two of three meals and snacks will be eaten at home by the year 2010.

Several factors may put consumers at risk for consuming more food products in larger quantities away from the home. Large portions encourage people to eat more and stimulate sales of products to adults and children. Food service establishments actively promote larger portions through the use of larger plates, larger baking pans, and larger containers for soda and fries.[102] Variety and palatability also stimulate intake, and restaurant eating offers individuals an opportunity to easily access a wide variety of highly palatable foods. Because large portions have become typical, consumers have increasd difficulty recognizing appropriate portion sizes for their weight and activity levels.[102]

Certain groups may be more at risk as well. With more women working outside the home and the increasing affordability of food prepared outside the home more

families are at increased risk for obesity.[101] Even food that is prepared in the home is increasingly likely to contribute to obesity because more and more Americans rely on prepared or convenience foods, that are extremely high in calories, quick to prepare, and inexpensive.

Substantial evidence supports an association between larger food portions and rising obesity rates. Portion sizes of foods and beverages commonly consumed in the US have increased, including white bread products, cakes, alcoholic beverages, hamburgers, steaks, soda, french fries, pasta, and pizza.[102] Between 1989-91 and 1994-96, portion sizes increased significantly for commonly eaten foods such as grains and cereals, soft drinks, coffee, tea, fruit juice, and beer.[103] Inconsistencies between two sets of standard serving sizes, the food guide pyramid and food label servings, may create confusion about correct serving sizes. In addition, prevention guidelines recommend "sensible" portion sizes but often do not define what those are. Most marketplace portions exceed standard serving sizes by at least two-fold and sometimes eight-fold.[102] Additionally, fast food chain portions are often two to five times larger than the size of the original item when it was first sold.[102] (See Figure 28.) It is important to note that other researchers have found that most of the increase in calories is from calories consumed during snacks, and not from larger portion sizes.[103]

The current eating environment promotes consumption of larger portions, in many cases without public awareness. In addition to containing more fat, calories, and sodium, "away" food contains less fiber and essential vitamins and minerals than food prepared in the home and may contribute to both obesity and malnutrition.[100] The increasing consumption of "away" food may also contribute to the phenomenon of fewer families eating together and children failing to view eating as a pleasurable social activity. Dual- and/or low income families who lack the time required for food preparation are likely to rely on "away" and convenience foods.

Figure 28. Examples of Increased Portion Sizes

Item	Original Size	Current Size (2002)
Hershey's Chocolate Bar	0.6 oz (in 1908)	1.6 - 8.0 oz
Burger King Hamburger Sandwich	3.9 oz (in 1954)	4.4-12.6 oz
McDonald's Soda	7 fl oz (in 1955)	12-42 fl oz

Source: Check Your Health. Portion Distortion in America. Retreived on May 23, 2005 from http://www.checkyourhealth.org/nutrition/portiondistortion/pd_facts.htm.

the neighborhood environment

Lack of Active Community Environments (ACEs)

Modern lifestyles contribute greatly to physical inactivity.

Workplaces are increasingly automated, many jobs are sedentary, and cars are used for short trips. The number of trips the average American adult takes on foot each year decreased 42 percent between 1975 and 1995.[104] Among American children, walking trips decreased 37 percent. Today only 10 percent of public school students walk to school compared to the majority of students a generation ago.[104] The most common means of transportation to school is by car.

Individuals who live in both rural and urban areas are at risk for physical inactivity because of community design. Most communities are designed to accommodate cars, and lack walkways and bikeways. Even where walkways and bikeways exist, wide roads and intersections, large parking lots, and drive-through businesses create environments that are uncomfortable and unsafe, and discourage physical activity among non-motorists.

Research shows that urban design and the physical environment can have a great influence, both positive and negative, on health behaviors. Studies show that elements of urban sprawl, including low-density residential developments, separation of land use, and poor access from one place to another by road, are associated with increased body weight. People living in sprawling communities weighed more than those living in more compact communities.[105] People living in compact communities were more likely to walk in their leisure time than those in sprawling communities. In addition, walking for utilitarian purposes, to reach a destination such as school, work, or shopping, is more likely in compact, mixed-use

communities.[105] A study showed that people who had poor access to sidewalks, including sidewalks on only one side of the street, were more likely to be overweight. In addition, those with poor access to recreational facilities, regardless of socioeconomic status, were more likely to be obese.[106]

The majority of Utah communities do not have environments and policies that support physical activity. In a recent survey of 236 Utah cities, only 34 percent of the cities reported having multi-use paths. Of the 139 total miles of multi-use paths that exist throughout the state, 68 miles (49 percent) are found in only five cities. Furthermore, less than one percent of paved streets have designated bike lanes, and only 11 cities reported having diagrams or directional signs describing the available bike lanes. Only three cities did not report the presence of neighborhood, school, and community parks, and park and connector trails.[107]

The majority of cities (66 percent) reported having policies requiring the building of paved sidewalks in new communities, but only 33 percent of cities required them in re-developed communities, and only 45 percent of cities required them in multi-use communities. All cities with populations of 100,000 or more reported having such policies, and several communities reported the intention to institute policies within the next year.[107]

The percentage of communities requiring bike lanes is dramatically lower than the numbers requiring paved sidewalks. Only five percent of cities containing at least 10,000 people and seven percent of cities containing 1,000-9,999 people report bike lane ordinances. Only 14 cities have policies requiring bike lanes in new, re-developed, or mixed-use communities, and less than two percent of Utah communities required shared-use paths in new communities.[107]

The Transportation Equity Act for the 21st Century (TEA-21), requires every local government to include pedestrian and biking facilities in their transportation plan. Yet, in Utah, only 67 percent of class 1 cities (population 100,000+); 20 percent of class 2 (10,000-99,999); 43 percent of class 3 (1,000-9,999); and 42 percent of class 4 (100-999) cities report having pedestrian and biking facilities in their plans. Eleven cities report an intention to include such policies within the next year, and 11 cities report not having Master Plans.[107]

Facilities and environments that support physical activity are of great importance to Utahns. More than 94 percent of Utah trail users and 65.9 percent of non-trail users reported that quality trails were

important. Furthermore, more than 65 percent of trail users and 48 percent of non-trail users felt quality trails result in economic benefit. Ninety percent of Utahns who used a trail in the past year agreed that having trails in or near their community allowed them to be physically active and led to a healthy lifestyle. Moreover, 66.7 percent of non-trail users also agreed with that statement.[107] Considering these attitudes toward ACEs, and the health status of Utahns today, it is imperative that local governments find ways and means to make quality trails available in every city and town in the state.

Chapter Five: Opportunities for Action

opportunities for action

The prevention and management of overweight and obesity, and associated health risks are critically important national and local goals. The US Surgeon General, in the 2001 Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity,[1] presented five overarching principles to help achieve these goals:

- Promote the recognition of overweight and obesity as major public health problems.
- Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
- Identify effective culturally appropriate interventions to prevent and treat overweight and obesity.
- Encourage environmental changes that help prevent overweight and obesity.
- Develop and enhance public-private partnerships to help implement this vision.

While, for the most part, overweight and obesity are a result of individual behaviors and choices, the environments in which we live shape those behaviors and choices. More than ever, we are challenged throughout the day to make healthy food and physical activity choices in environments that are not supportive. And, we now know the critical link between those choices and our collective future health and well-being.

Our *families, communities, schools, worksites, health care delivery systems, and the mass media*, to a large extent, define our environments. Therefore, these are the settings where we must identify opportunities for change, remove barriers to good health, and promote choices that support good nutrition and regular physical activity. The settings are inter-related and overlapping. Collaboration among and between people and organizations will multiply the efforts to improve weight management by individuals and for the entire population. It is also critical that monitoring and reporting of indicators related to overweight and obesity be continued and refined. Through these efforts, we will be able to focus resources and define successes.

Families and Communities

Families and communities are integral to solving the problems of overweight and obesity. Families provide the perfect setting to teach and model healthy eating and regular physical activity. Adults in families offer day-to-day support and reinforcement of healthy choices for children and each other. In the community, establishing environmental supports and policies, such as walkable safe neighborhoods and easily accessed nutritious foods, helps provide opportunities for families to develop healthy eating and physical activity behaviors.

Schools

Schools provide a primary opportunity to reach Utah's children and youth, during traditional school time and in pre-school and after-school programs. As well as teaching children about healthy eating and physical activity using sound curricula, schools serve as a modeling environment where healthy eating and regular physical activity habits that will last a lifetime can be developed and supported. Schools also have the unique ability to bring together parents, children, and the community to improve children's lives.

Worksites

Much like schools are an effective setting to reach children, worksites are important in reaching adults. Ideally, employers can offer coordinated health communication, education, training, and peer support systems that support healthy eating and regular physical activity. Even in less-than-ideal situations, worksites still afford an opportunity to communicate and model healthy behaviors for working adults. They provide opportunities for healthy physical and social environments, serve as important links to the family and extended communities, and offer a setting in which policy change may be implemented.

Health Care

Because the majority of Utahns interact with the health care system in any given year, health care providers are critical in the fight against overweight and obesity. Most people look to their providers for guidance on health matters, and health insurers may offer important incentives and rewards to encourage and support healthy behaviors. Local health care facilities can provide support and resources for healthy lifestyles. Importantly, providers can bring their expertise to both prevention and management of overweight and obesity in partnership with their patients, communities, schools, worksites, and the media.

Mass Media and Communications

We are surrounded by a commercial environment and by media messages that influence the choices we make. Unfortunately, increasing numbers of these messages support behaviors and choices that can lead to unhealthy weight gain. The food, beverage, restaurant, entertainment, leisure, and recreation industries share a part of the responsibility for our Nation's obesity epidemic. Media messages supporting choices focusing on healthy weight rather than appearance need to be consistent, clear, coordinated, and targeted. The media can deliver significant services in the fight to prevent and reduce overweight and obesity by increasing health messages, modeling healthy behaviors, and publicizing family, community, school, worksite, and health care provider efforts.

Overall

We are facing an unprecedented public health epidemic of overweight and obesity that may lead to the first generations in our Nation's history who will live shorter lives than their parents, with many of those years being in poor health. The projected long term health care costs of this epidemic are staggering. Utahns of all ages and races and both genders are affected directly or indirectly.

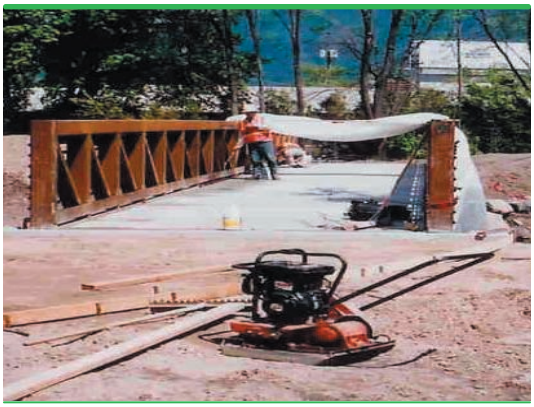
Now is the time for Utah's leaders, in all sectors, to work together to develop a focused, consistent, and coordinated approach that will create a culture and environment in Utah that makes the healthy choice the easy choice.

Chapter Six: Examples of Success

examples of success

Below are examples of projects which resulted in changing the environment to allow for a healthier diet and increased physical activity.

Lava Flow Trail in Santa Clara
The original sidewalk path ended abruptly, making it unsafe for school-aged children to use. The city planners and the Southwest Utah Health Department collaborated to improve safety and access by extending the trail to a major intersection. Residents and business owners say this trail has improved safety and enhanced property values. Extending this path took some coordination with the city planners and a master plan was established to further extend the trail.



Jordan River Parkway Trail
Salt Lake City
Salt Lake County and others enhanced the Jordan River Parkway Trail that winds through the county by installing trail markers and directional signs. Installing the signs and securing funding was easy to do. Individuals who use the trails said that the trails have become a huge amenity for businesses. There is a master plan for the Jordan River Trail that includes extending the trail to connect with Utah and Davis counties.

Bridge Project on the
Ogden River Parkway Trail
The Weber-Morgan Health Department and businesses partnered to improve access and connections of the Ogden trail network by installing a bridge that extended the trail an extra mile. The new bridge has helped revitalize the downtown area. Adults, couples, and families are now walking, cycling, running, and roller blading on the trails. Although the bridge was expensive ($100,000), many partners donated time and money to make it happen.

Legacy Gold Medal Miles

Legacy Gold Medal Miles comprise 40 one-mile walks throughout Utah designed to encourage Utahns to become more physically active. They were first established in 2002 for the Winter Olympics, and new sites are still being added. This started as an initiative between the Salt Lake Organizing Committee for the Olympic Winter Games of 2002 (SLOC) and 18 health organizations located in Utah. (See Appendix C for more information.)

Gold Medal School Program Diet & Tobacco/Drug Prevention

The Gold Medal School Program encourages Utah elementary schools to promote regular physical activity, good nutrition, tobacco/drug prevention, and safe routes to school. Currently, 80 percent of school districts have at least one Gold Medal School, and one-third of all Utah elementary schools are Gold Medal Schools. Gold Medal Schools supports a non-food reward policy stating that all teachers and staff do not use food as a reward or punishment. (See Appendix D for more information.)

Gold Medal School Initiative Physical Activity

Gold Medal Schools develop a Gold Medal Mile™ on or around their elementary school and establish a goal for student participation. Some schools use Legacy Gold Medal Miles that are close to their schools. Additionally, schools are coached to implement the Utah State Office of Education's physical education core curriculum, including 90 minutes of structured physical activity each week. (See Appendix D for more information.)

Nebo School District "De-Junked" School Vending Machines

In December 2004 the Nebo School District unanimously passed a policy requiring all middle and high school vending machines to offer at least 50 percent heathly snacks or drinks. The policy defines healthy snacks as those with 35 percent or fewer total calories from fat and 35 percent or less sugar by weight. Drink selections include milk, flavored milk, water, fruit drinks (with at least 10 percent fruit juice), and noncarbonated sports drinks with less than 42 grams of added sweetener per 20 ounces. The schools are also required to conduct campaigns on how to make healthy food choices.

Bountiful High School Received $1000 to Fight Teen Obesity

Bountiful High School was one of 50 schools nationwide to receive a first prize award of $1000 from the "2005: got milk? Healthy Schools Challenge Contest" which is jointly sponsored by the "got milk?" campaign and the National Basketball Association. The contest is designed to address teen obesity. The funds will be used for the school's GEAR-UP program that encourages teens to increase physical activity. (For more information on the "2005: got milk? Healthy Schools Challenge Contest" go to *www.whymilk.com/nba_hsc.htm.*)

Utah Department of Health Stairwell Painting Project

In May 2005 the Utah Department of Health entered into an agreement with Weber State University graphic design students to create health concious murals in the stairwells at the Cannon Health Building in Salt Lake City. The hope was that an appealing stairwell would encourage the 800 employees to choose the stairs over the elevator. The 14 students made presentations and defended their designs to the Health Department officals who selected three designs to be used in the main stairway.

Wasatch School District Established a Nutrition Policy

In July 2004 the Wasatch School District became the first Utah district to establish a nutrition policy limiting sweets and junk food. The policy requires 70 percent of all vending machine offerings to be water, milk, 100 percent fruit juices, and edibles that meet the District's minimum nutritional standards. Additionally, junk food items are priced higher than healthier options. There is a ban on vending machines in elementary and middle schools and a plan is being drafted to offer fewer processed foods and more fruits, vegetables, and low-fat and low-sugar items.

Utah Council for Worksite Health Promotion

The Utah Department of Health grants Healthy Worksite Awards annually to companies who meet specific goals, including healthy lifestyle changes in employees, positive changes in the worksite environment, and company policies that support healthy lifestyles. Many of the worksite health programs have a wellness committee, offer on-site healthy food options, and make tobacco cessation and stress management programs available. More information is available at *http://health.utah.gov/worksitewellness/*. (See Appendix E for a worksite evaluation form.)

UTAH COUNCIL for Worksite Health Promotion

ARUP Laboratories Named Utah 2005 Best Companies to Work

ARUP Laboratories promotes a healthy lifestyle and weight management to its employees by having an on-site Employee Health Clinic, a Preventive Medical Program, on-site wellness programs (such as Weight Watchers at Work), an on-site cafeteria that emphsizes healthy eating, and a Wellness Center with trained staff available 24 hours a day. For those employees who find it difficult to find time to work out, the company holds 15-minute exercise breaks which are held during the employee's daily break times. (See Appendix F for more details.)

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Appendix A: Definition of Obesity and Overweight

Body mass index (BMI) is widely used to determine obesity and overweight because it is inexpensive, reproducible, and convenient. It is a reasonable approximation of the amount of body fat for most adults and has thus come to be the standard for assessing obesity, both in the US and internationally. BMI is falsely high in individuals with a great deal of muscle mass (such as bodybuilders), and falsely low in those that have lost muscle mass, such as the elderly.

Body Mass Index (BMI) is calculated as follows:

English System:

$$\text{BMI} = \left(\frac{\text{weight(pounds)}}{\text{height(inches)} \times \text{height(inches)}} \right) \times 703$$

Metric System:

$$\text{BMI} = \left(\frac{\text{weight(kilograms)}}{\text{height(meters)} \times \text{height(meters)}} \right)$$

Adults

For adults, an ideal body weight is defined as a BMI 18.5 to 24.9, overweight is defined as 25.0 to 29.9, and obese is defined as greater than or equal to 30. Overweight and obesity for adults are classified as above, without regard to gender or age.

Children and Adolescents

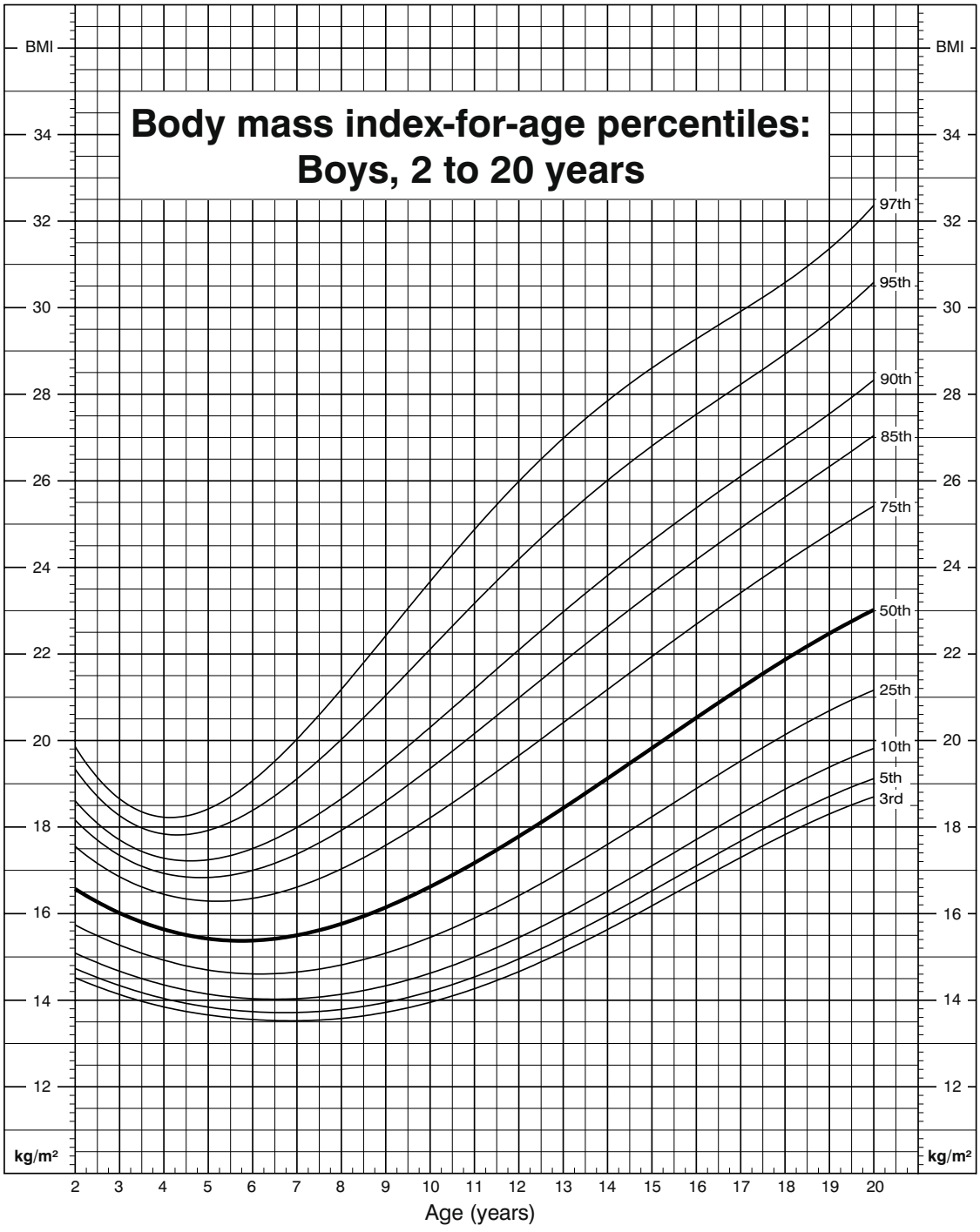
For children, BMI is gender specific and age specific. Because BMI changes substantially as children get older, BMI for age is the measure used for children ages 2 to 20 years.

"Overweight", or obesity, for children is defined as greater than or equal to the 95th percentile for BMI by age and sex based on CDC Growth Charts. "At risk of becoming overweight" is defined as greater than or equal to the 85th percentile but less than the 95th percentile for BMI by age and sex based on CDC Growth Charts.

CDC Growth Charts

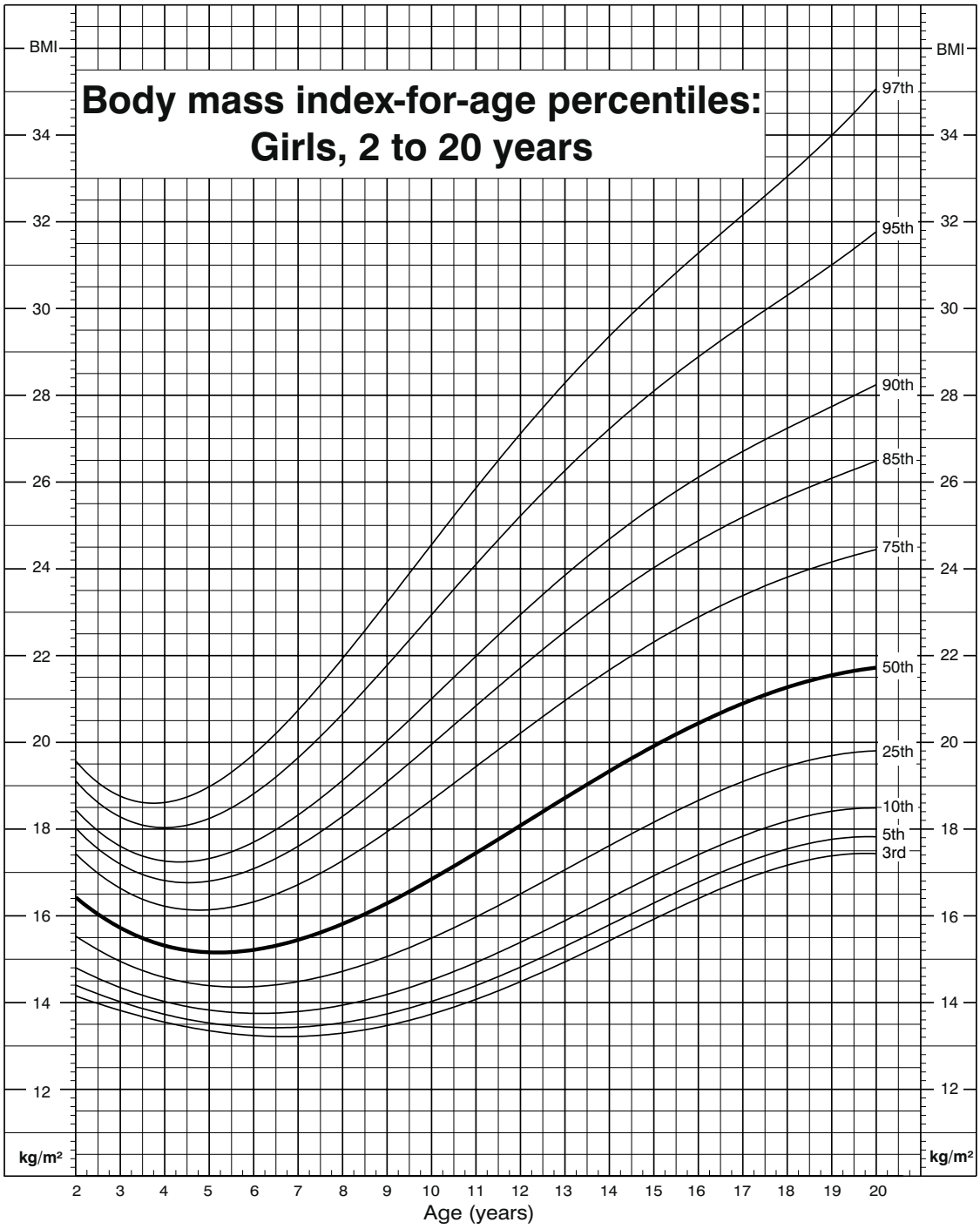
BMI-for-age percentiles for boys 2 to 20 years and BMI-for-age percentiles for girls 2 to 20 years are found on pages 48 and 49.

Source: Tools for Calculating Body Mass Index (BMI). Nutrition & Physical Activity. Center for Disease Control and Prevention. Retrieved on June 28, 2005, from *http:///www.cdc.goc/nccdphp/dbpa/growthcharts/bmi_tools.htm*



SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION



SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Appendix B: Healthy People 2010 Objectives

Healthy People 2010 outlines a comprehensive, nationwide health promotion and disease prevention agenda. It is designed to serve as a roadmap for improving the health of all people in the United States during the first decade of the 21st century.

Like the preceding Healthy People 2000 initiative – which was driven by an ambitious, yet achievable, 10-year strategy for improving the Nation's health by the end of the 20th century – Healthy People 2010 is committed to a single, overarching purpose: promoting health and preventing illness, disability, and premature death.

Chapter 1: Overweight and Obesity By Age

Children and Adolescents

19-3: Reduce the proportion of children and adolescents who are overweight or obese.

Utah Target: 5 percent.

Adults

19-1: Increase the proportion of adults who are at a healthy weight.

No Utah Target.

19-2: Reduce the proportion of adults who are obese.

Utah Target: 15 percent.

Chapter 2: Overweight and Obesity and Co-Existing Chronic Diseases

Diabetes

5-3: Reduce the overall rate of diabetes that is clinically diagnosed.

Utah Target: 25 overall cases per 1,000 population.

19-17: Increase the proportion of physician office visits made by patients with a diagnosis of cardiovascular disease, diabetes, or hyperlipidemia that include counseling or education related to diet and nutrition.

No Utah Target.

Hypertension, Stroke, and Heart Disease

12-9: Reduce the proportion of adults with high blood pressure.

No Utah Target.

12-11: Increase the proportion of adults with high blood pressure who are taking action (for example, losing weight, increasing physical activity, or reducing sodium intake) to help control their blood pressure.

No Utah Target.

12-14: Reduce the proportion of adults with high total blood cholesterol.

No Utah Target.

19-17: Increase the proportion of physician office visits made by patients with a diagnosis of cardiovascular disease, diabetes, or hyperlipidemia that include counseling or education related to diet and nutrition.

No Utah Target.

Arthritis

2-2: Reduce the proportion of adults with chronic joint symptoms/arthritis who experience a limitation in activity due to arthritis.

Utah Target: 21 percent.

Asthma

24-4: Reduce activity limitations among persons with asthma.

No Utah Target.

Cancer

3-1: Reduce the overall cancer death rate.
Utah Target: 144.1/100,000 population.

Violence & Injury Prevention

15-19: Increase the use of safety belts.
Utah Target: 85 percent.
18-3: Reduce the suicide rate.
No Utah Target.
18-4: Reduce the rate of suicide attempts in adolescents.
No Utah Target.

Chapter 3: Lifestyle and Genetic Factors

Diet

16-19: Increase the proportion of mothers who breastfeed their babies.
Utah Target: early postpartum period 75 percent.
19-3: Reduce the proportion of children and adolescents who are overweight or obese.
No Utah Target.
19-5: Increase the proportion of persons aged 2 years and older who consume at least 2 daily servings of fruit.
Utah Target: 45 percent.
19-6: Increase the proportion of persons aged 2 years and older who consume at least 3 daily servings of vegetables, with at least one-third being dark green or deep yellow vegetables.
No Utah Target.
19-7: Increase the proportion of persons aged 2 years and older who consume at least 6 daily servings of grain products, with at least 3 being whole grains.
Utah Target: 55 percent.
19-8: Increase the proportion of persons aged 2 years and older who consume less than 10 percent of calories from saturated fat.
No Utah Target.
19-9: Increase the proportion of persons aged 2 years and older who consume no more than 30 percent of calories from total fat.
No Utah Target.
19-10: Increase the proportion of persons aged 2 years and older who consume 2,400 mg or less of sodium daily.
No Utah Target.
19-11: Increase the proportion of persons aged 2 years and older who meet dietary recommendations for calcium.
No Utah Target.
19-12: Reduce iron deficiency among young children and females of childbearing age.
No Utah Target.

Physical Activity

22-1: Reduce the proportion of adults who enegage in no leisure time physical activity.
Utah Target: no more than 15 percent.
22-2: Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.
Utah Target: 65 percent.
19-1: Increase the proportion of adults who are at a healthy weight.
No Utah Target.
19.2: Reduce the proportion of adults who are obese.
Utah Target: 15 percent.

Chapter 4: System Issues and Environmental Barriers to Overweight and Obesity Control

19-15: Increase the proportion of children and adolescents aged six to 19 years whose intake of meals and snacks at school contributes to good overall dietary quality.
No Utah Target.

19-16: Increase the proportion of worksites that offer nutrition or weight management classes or counseling.
No Utah Target.

22-8.1: Increase the proportion of the Nation's public and private schools that require daily physical education for all students.
No Utah Target.

22-9: Increase the proportion of adolescents who participate in daily school physical education.
No Utah Target.

22-10: Increase the proportion of adolescents who spend at least 50 percent of school physical education class time being physically active.
No Utah Target.

22-11: Increase the proportion of adolescents who view television 2 or fewer hours on a school day.
No Utah Target.

22-13: Increase the proportion of worksites offering employer-sponsored physical activity and fitness programs.
No Utah Target.

22-14: Increase the proportion of trips made by walking.
No Utah Target.

22-15: Increase the proportion of trips made by bicycling.
No Utah Target.

Appendix C: Legacy Gold Medal Mile Program

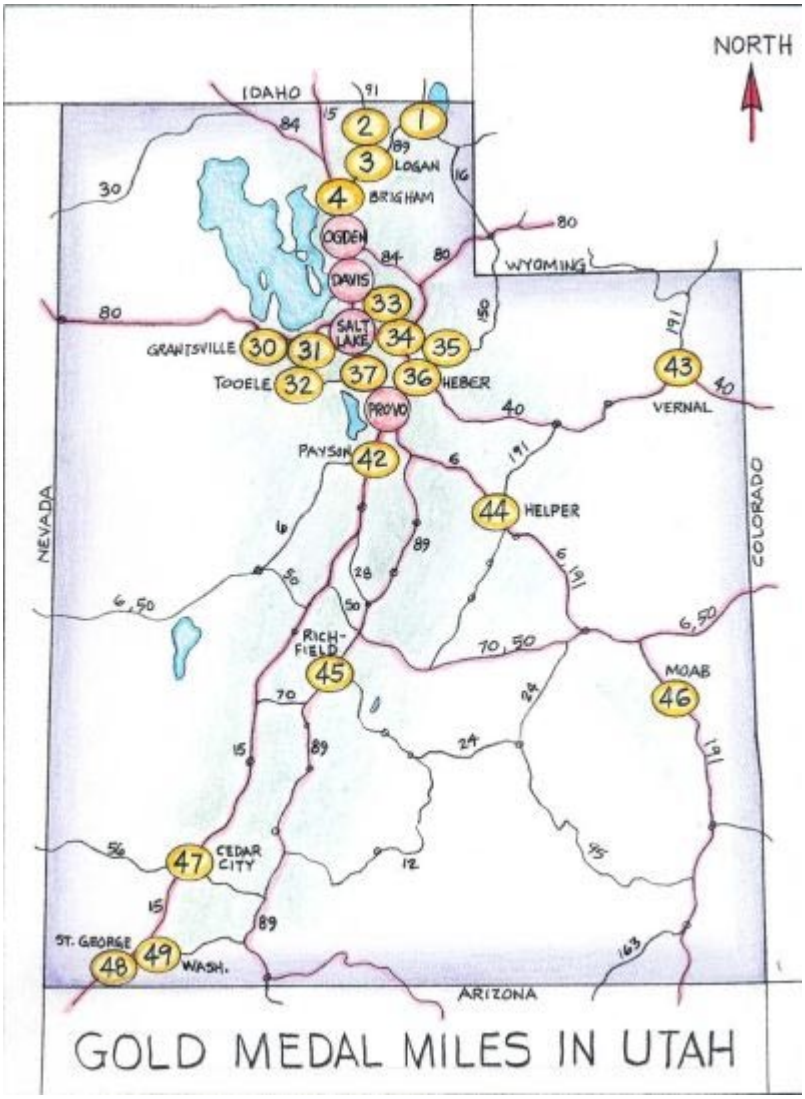
Legacy Gold Medal Miles are one-mile walks designed to encourage Utahns to become more physically active. Over 40 Gold Medal Mile Legacy Sites have been established throughout Utah. The aim of these sites is to establish the legacy of the 2002 Winter Olympic Games, as well as to provide safe, comfortable, and interesting trails for Utahns to enjoy. They are an integral part of the "A Healthier You 2002 Legacy Awards Program." Maps and locations of these trails can be found on the UtahWalks web site (*http://www.utahwalks.org/gmm/gmmselect.php*) and in the "Gold Medal Miles: Continuing the Spirit" booklet, prepared by the Utah Alliance for Cardiovascular Health in Utah (*http://www.hearthighway.org/cvd/Alliance/alliance_in_utah.htm*).

A Healthier You 2002™, Utah's Health Legacy was an initiative between the Salt Lake Organizing Committee for the Olympic Winter Games of 2002 (SLOC) and 18 health organizations located in Utah. The initiative employed a legacy of health and fitness to improve and motivate Utahns to trade in unhealthy lifestyles and embrace a life of health and wellness. The objective of this program was to maximize the health of all Utahns through the spirit of the 2002 Olympic Games. This spirit continues through the "A Healthier You 2002 Legacy Awards Program."

The initiative hopes to improve the health of our citizens by providing information, opportunities for participation, and motivational incentives to begin and maintain healthy behaviors.

A map identifying the locations of the gold medal mile trails is included on page 56. Currently there are 49 gold medal mile trails but more are being added. Please refer to the UtahWalks website (*http://www.utahwalks.org/gmm/gmmselect.php*) for the most current list of locations.

01 Garden City, BLM Trail
02 Smithfield, Mack Park
03 Logan, Logan R Trail
04 Brigham City, Rees Park
05 Ogden, Union Station
06 Ogden, Learning Park
07 Ogden, Weber State
08 Ogden, McKay
09 Ogden, Newgate Mall
10 Riverdale, City Park
11 Clinton, Powerline Park
12 Clearfield, Steed Park
13 Layton, Ellison Park
14 Kaysville, E M W Park
15 Centerville, Comm Park
16 SLC, Cannon Bldg
17 SLC, Gallivan Center
18 SLC, U of U West
19 SLC, U of U East
20 SLC, Liberty Park
21 SLC, JRP, Workman Park
22 WVC, Fitness Center
23 WVC, Valley Fair Mall
24 Holladay, Civic Plaza
25 Kearns, Oquirrh Park
26 Murray, JRP, Winchester
27 W Jordan, JRP, 7800 S
28 Midvale, JRP, 7800 S
29 Sandy, Lone Peak Park
30 Grantsville, High School
31 Toole, Smelter Road
32 Toole, Settlement Cyn
33 Snyderville, UT Olympic Park
34 Park City, Farm Trail
35 Jordanelle, Rock Cliff
36 Heber, Midway Lane
37 Lindon, Timp Lake Trail
38 Provo, Riverview Park
39 Provo, Carterville
40 Provo, Rock Canyon
41 Provo, BYU Campus



42 Payson, Dry Creek Park
43 Vernal, Legacy Park
44 Helper, Price R Parkway
45 Richfield, Swim Pool
46 Moab, Mill Cr Parkway
47 Cedar City, Coal Creek
48 St. George, Virgin R
49 Washington City

Appendix D: Gold Medal Schools Program

Vision:

A tradition of health in Utah schools.

Mission:

"Create opportunities for students to:

- Eat healthy
- Be active
- Stay tobacco free"

The Gold Medal School (GMS) program makes it possible to provide opportunities for physical activity and healthy nutrition choices in elementary schools at a time when budget cuts and testing requirements overshadow physical activity and nutrition.

The Utah Department of Health developed the GMS program in 2001 using the State Office of Education's core curriculum and the Centers for Disease Control's guidelines to address overweight and obesity in elementary schools. Today, it is the most successful program for physical activity and nutrition in the state, reaching 75,741 kids in 160 schools!

Why do schools participate?

- Healthy schools make healthy learners. Studies clearly demonstrate that students who are physically active and have good nutrition achieve higher test scores.
- Gold Medal Schools emphasize changes to physical activity, nutrition, and tobacco policies in order to create a healthier school environment. Gold Medal Schools will not change curriculum.
- The initiative will make lasting changes without putting high demands on teachers.
- Schools receive money for nutrition resources, P.E. equipment, and tobacco prevention.
- Students at Gold Medal Schools enjoy walking, a tobacco-free school environment, Safe and Active Routes to Schools, healthier faculty and staff, and much more.

How the Gold Medal School Program Works

By signing up to be a Gold Medal School, you will have happier, healthier, and smarter students, faculty, and parents. The path to becoming a Gold Medal School is divided into three categories: Bronze, Silver, and Gold. A University student majoring in health nutrition, physical education, or elementary education will be assigned to each school as a personal mentor. The mentor will help the school meet the criteria to achieve each level.

Examples of criteria include:

- School develops a policy for full implementation of the State Office of Education's physical education core curriculum, including 90 minutes of structured physical activity each week.
- School establishes a Gold Medal Mile walking program on or around school grounds and sets a goal for each student to walk at least one mile each week.
- School develops a policy for all teachers and staff that food is not to be used as a reward nor as a punishment.

- School develops a policy for a staff wellness program.

As the school reaches each level, the school is awarded a cash prize. Bronze schools receive $200, Silver schools receive $300, and Gold schools receive $500, for a total of $1000 if the school completes all the levels. This money can be used to purchase new pysical education equipment, nutrition resources, or tobacco prevention materials.

After the school reaches the Gold level the school can continue the program by becoming a Gold Plus School. Upon completion of Gold Plus, Phase I schools receive a plaque and $100, Phase II schools receive $200, and Phase III schools receive $300.

Partners Include:

- A Healthier You 2002
- Action for Healthy Kids
- All 12 Utah local health departments
- Intermountain Health Care Healthy Communities
- PEHP Healthy Utah
- UDOH Tobacco Prevention and Control Program
- UDOH Violence and Injury Prevention Program
- Utah PTA

For more information please contact:
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srigby@utah.gov

Appendix E: Worksite Evaluation Form

How Does My Company Compare?

What are the components of a comprehensive worksite wellness program?

Check and see if your worksite has the following:

_____ Cohesive wellness committee

_____ Person responsible for wellness committee

_____ Formal mission statement (with employee health identified as guiding principle)

_____ Documented health promotion plan (with a budget)

_____ Programs available to employees and their spouses

_____ Employee incentive or rewards program (with documentation of participation and effectiveness)

_____ Written policies related to corporate wellness

_____ Evaluation process to determine the effectiveness of interventions

_____ Compliance with state tobacco use restriction laws

_____ Provides child care information and elder care information

_____ Addresses work and family needs of employees

_____ Provides a regular program for medical self-care

_____ Addresses needs of diverse employee groups

UTAH COUNCIL for Worksite Health Promotion

Contact the Utah Council for Worksite Health Promotion (UCWHP) for more information.
www.health.utah.gov/worksitewellness

Appendix F: Worksite Success Story

ARUP LABORATORIES

ARUP Laboratories promotes healthy lifestyles and weight management to its employees through a variety of avenues, including an on-site employee health clinic, Wellness Center, café, and other health-related programs.

ARUP's **on-site employee health clinic** has been one of ARUP's most innovative and creative endeavors, treating approximately 800 people a month. The clinic is free to all employees (not just full-time or those covered by insurance), their dependants and retired employees and their dependants. The clinic is supervised by an M.D. from the Department of Family Practice at the University of Utah. There are two physician assistants who cover the daily office visits. They are supported by four medical assistants and a receptionist. Although the clinic can handle workplace emergencies, it generally handles urgent care (headaches, sore throats, fever, etc.) and routine care (physical exams, well-child check-ups, vaccinations, Pap smears, blood work, allergy shots, etc.).

ARUP recently remodeled a 2,800 square-foot space for a new **Wellness Center** where employees and their spouses have lockers, showers, exercise equipment and classes, as well as a trained staff at their disposal 24 hours a day.

Employees who typically would find it difficult to fit exercise into their busy lifestyles are now able to get up to 30 minutes a day on company time by taking advantage of 15-minute exercise classes held during their daily breaks. It is not uncommon to pass by the Wellness Center and see men and women, dressed in business attire, participating in abs, lift, step, stretch, or circuit classes. One woman who regularly attends the classes during her breaks happily reported increases in muscle tone and the loss of a clothing size.

"Upper management support for employee health and wellness is one of the keys to our program's success," said ARUP Wellness Director Rebecca Fietkau. "The commitment to wellness here starts at the top." ARUP's CEO, Dr. Carl Kjeldsberg, for example, not only endorses the company's wellness offerings, but he also gets out and walks with his employees every Thursday at noon. He also presents a monthly award (valued at $300) which highlights employees who have made impressive health behavior changes. Their inspiring stories, which often include impressive amounts of weight loss, are found in the monthly employee newsletter.

Last year, ARUP opened its **on-site café, The View**, which offers breakfast,

lunch, dinner, and an evening meal from 11:30 p.m. – 1:30 a.m. Fresh fruits and vegetables are always available. Since opening, additional efforts have been made to improve the healthy offerings of the café. This includes the elimination of 32 oz. fountain drinks, changes in the prevalence of regular potato chips, creamy soups, and high-calorie desserts. Instead of tempting treats located by the check out register, employees find fruit, pretzels, or healthy trail mix combinations. More positive health offerings are actively in the works.

In 2004, ARUP implemented a **Preventive Medical Program**, under the direction of the physician in charge of ARUP's on-site health clinic with two Physician Assistants and the Wellness Coordinators. As part of this program, the most common health problems and complaints at ARUP are identified and then leaders develop a program to prevent or help reduce those problems/complaints. It is meant to be preventative as well as educational for employees. For instance, employees may suffer from weight-related problems, so the director, physician assistants, and wellness coordinators help plan more nutritious meals with the kitchen staff and identify each day in the cafeteria which foods contain what elements (such as which foods are low carb, high fat, low fat, etc.).

Other on-site wellness programming has facilitated healthy lifestyle and weight management success for ARUP employees. For example, a group of 35 employees participated in **Weight Watchers at Work**, and they lost nearly 900 pounds in nine months! Some participants' success went beyond looking and feeling better and translated into a reduction or elimination of previously needed blood pressure and blood lipid controlling medications.

Individual weight loss and healthy behavior change consultations are also available free of charge with Wellness Center staff. One woman who meets regularly with the staff successfully lost 65 pounds and is on her way to reaching her goal of a hundred pound loss. The 5 A Day (fruits and vegetables) incentive program facilitated healthy changes in another woman's diet. Her subsequent weight loss further motivated her to start riding an exercise bike and lifting weights during her work breaks. Through "The Amazing World Race" incentive, a gentleman began exercising and eating a healthier diet. He lost 80 pounds over the next 10 months and returned to the level of fitness he enjoyed in his younger years.

These benefits have gone a long way toward winning ARUP the loyalty of its nearly 1,800 employees. Employees enjoy the positive work environment, are very happy with their benefits, and ARUP is pleased with the positive feedback from employees, the increase in morale and job performance, and the obvious health benefits to its employees. It has turned out to be a win-win situation for everyone involved.

Appendix G: Resources

Systems Resources:

ACEs: Active Community Environments Initiative. CDC's Active Community Environments Initiative (ACES) promotes walking, bicycling, and the development of accessible recreation facilities. It was developed in response to data from a variety of disciplines, including public health, urban design, and transportation planning. These data suggest characteristics of our communities such as proximity of facilities, street design, density of housing, and availability of public transit and of pedestrian and bicycle facilities play a significant role in promoting or discouraging physical activity. For more information go to: *www.cdc.gov/nccdphp/dnpa/aces.htm.*

Action for Healthy Kids. A nationwide initiative dedicated to improving the health and educational performance of children through better nutrition and physical activity in schools. This effort represents a response to our nation's epidemic of overweight, sedentary, and undernourished children and adolescents. For more information go to: *www.actionforhealthykids.org.*

Active Living by Design. A national program of The Robert Wood Johnson Foundation and is administered by the University of North Carolina's School of Public Health in Chapel Hill. The program establishes and evaluates innovative approaches to increase physical activity through community design, public policies, and communications strategies. For more information go to: *www.activelivingbydesign.org.*

American Obesity Association (AOA). The AOA is the only obesity organization focused on changing public policy and perceptions about obesity. For more information go to: *www.obesity.org.*

Association for Utah Community Health. This organization supports and represents its member organizations and works to increase access to health care for medically underserved populations in Utah. For more information go to: *http://www.auch.org.*

Center for Disease Control and Prevention (CDC) Resources Overweight and Obesity Resources. A hyperlinked list of resources addressing both the individual and systems relating to overweight and obesity. For more information go to: *www.cdc.gov/nccdphp/dnpa/obesity/resources.htm.*

Center for Disease Control and Prevention (CDC) State-Based Nutrition and Physical Activity to Prevent Obesity and Other Chronic Diseases. CDC's Division of Nutrition and Physical Activity (DNPA) takes a public health approach to address the role of nutrition and physical activity in improving the public's health and preventing and controlling chronic diseases. The scope of DNPA activities includes epidemiological and behavioral research, surveillance, training and education, intervention development, health promotion and leadership, policy and environmental change, communication and social marketing, and partnership development. For more information go to: *www.cdc.gov/nccdphp/dnpa/obesity/state_programs.*

Mayors Bicycle Advisory Committee (MBAC). The MBAC consists of active and involved members committed to the mission and goals of bicycle advocacy. Members motivate and encourage each other and potential new members in the belief that their efforts on behalf of the MBAC can and will make a difference. For more information go to: *www.slcgov.com/transportation/bicycletraffic/committees.htm.*

Pedestrian and Bicycle Information Center (PBIC). The PBIC is a clearinghouse for information about health and safety, engineering, advocacy, education, enforcement and access and mobility. The PBIC serves anyone interested in pedestrian and bicycle issues, including planners, engineers, private citizens, advocates, educators, police enforcement and the health community. For more information go to: *www.pedbikeinfo.org.*

Rails-to-Trails Conservancy. Creating a nationwide network of trails from former rail lines and connecting corridors to build healthier places for healthier people. For more information go to: *www.railtrails.org.*

The Robert Wood Johnson Foundation. The nation's largest philanthropy devoted exclusively to improving the health and health care of all Americans, the Robert Wood Johnson Foundation works with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful and timely change. For more information go to: www.rwjf.org.

Resources for Individuals:

American Cancer Society. Sponsors fund-raising athletic events such as Relay for Life. For more information go to: *www.cancer.org*

American Diabetes Association. Is the nation's leading nonprofit health organization providing diabetes research, information, and advocacy. The ADA has information on diet and exercise, as well as information on fund-raiser events such as Walk for Diabetes and Tour de Cure, on their website. For more information go to: *www.diabetes.org.*

American Heart Association (AHA). Their mission is to reduce disability and death from cardiovascular diseases and stroke. The AHA has information on diet and exercise, as well as information on fund-raiser events such as Heart Walk and Hoops for Heart, on their website. For more information go to: *www.americanheart.org.*

Arthritis Foundation. Sponsors fund-raising athetic events such as Arthritis Walk and Joints in Motion Training Team (teach you to walk or run a marathon or hike a challenging trail). The Arthritis Self-Help Course (ASHC) is a group education program designed to complement the professional services provided by your heath care team. Information on exercise classes designed for people with arthritis can be obtained by calling 1-800-444-4993 or go to *www.arthritis.org.*

Check Your Health. Has information on diet and exercise in conjunction with KUTV. Includes a fitness challenge. For more information go to: *www.utahwalks.org* and *www.checkyourhealth.org*.

Cruising the Heart Highway, Heart Disease and Stroke Prevention Program, Utah Department of Health. Information on diet, exercise, and the Gold Medal School Program. For more information go to: *www.hearthighway.org*.

Food and Drug Administration (FDA) Food Label Website. The FDA Food Labeling web pages address the labeling requirements for foods under the Federal Food Drug and Cosmetic Act and its amendments. There is information on how to read a food label, educational materials, and current regulations. For more information go to: *www.cfsan.fda.gov/label.html*.

Harvard School of Public Health Nutrition Source. Aside from not smoking, the most important determinants of good health are what we eat and how active we are. The Nutrition Source is designed to get you started down the path toward the healthiest diet possible. For more information go to: *www.hsph.harvard.edu/nutritionsource*.

Kidnetic.com. This website is a wonderful site for children who like to play hard and have fun. It contains many fitness games and recipes for children. Kidnetic.com also has a section just for parents. Parents can get the facts about children and physical activity, healthy eating and self-esteem. They can also ask experts questions and share their thoughts and experiences with other parents. For more information go to: *www.kidnetic.com*.

MedlinePlus. This website has a wealth of health information from the world's largest medical library, the National Library of Medicine. Information is available for both health professionals and consumers. For more information go to: *www.medlineplus.gov*.

Salt Lake City Track Club
The Salt Lake City Track Club is an athletic organization that provides for the association of persons interested in personal health and wellness through the activity of running. The Club's primary focus is distance running, but all types of runners and walkers are welcome. As an athletic organization, they organize, promote, and support Club sponsored races and fun runs that provide opportunities for runners to associate and compete. Their activities are dedicated to promoting the welfare of the Club membership and the Utah running community. For more information go to: *www.slctrackclub.org*.

Utah Walks. This website tells you how to help create places for people to walk and bicycle, as well as identifies where you can find such places for your own use. For more information go to: *www.utahwalks.org*.